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# **A Clinical and Neuro-Radiological Study of Nihilistic Delusions**

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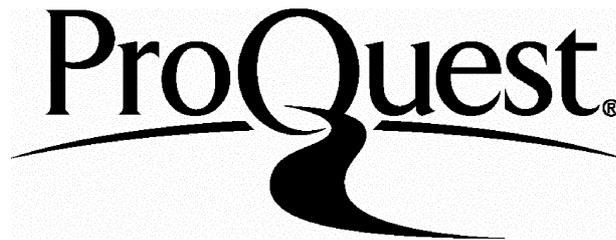
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# ABSTRACT

In 1882 the French psychiatrist Jules Cotard first used the term Nihilistic delusions (ND) to describe the beliefs of patients who denied their existence. Together with other symptoms, these bizarre delusions have since been regarded as a central feature of "Cotard's Syndrome". A century later, the existence, aetiology and relevance of this syndrome to modern psychiatric practice has been questioned. In this thesis the author reviews the literature on ND and sets this against the background of earlier work published on hypochondriacal delusions (HD), and later studies of organic brain syndromes in which the existence of body parts is denied.

A study is described in which two groups of patients admitted over one year, to five psychiatric units, who expressed ND (n=15) or HD (n=16), were examined; the admission incidence rates were 3.4 and 4.3, per 1000 admissions, respectively. ND patients were predominantly female and middle aged while the HD group were mostly male and, significantly older. The majority of patients in both groups were clinically depressed, though on PSE testing, a large number of the ND patients had a non-affective psychosis. The pattern of psychiatric illness and response to treatment was similar in the two groups, ECT being an integral part of successful treatment regimes. Data from psychometric testing and CT brain scans failed to support the theory that ND and Cotard's syndrome have an organic aetiology. The preservation of the concept of Cotard's syndrome is argued for, though it is suggested that the illness should more correctly be regarded as schizophrenic, rather than depressive, in type.

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# Chapter 1. INTRODUCTION

Just over one hundred years ago, the French psychiatrist Jules Cotard (1880), addressing a Congress of Neurologists, outlined a particular type of delusional formation shown by a patient who denied she had a name, had ever been born or ever existed. At her worst she stated the world had disappeared and that she was dead. To these beliefs, in which denial of existence was central, Cotard (1882) ascribed the term “*délire de négations*” or Nihilistic Delusion (ND). A decade later two other French psychiatrists (Régis 1893, Séglas 1897) suggested that these delusions were part of a syndromal entity and proposed the title “Cotard Syndrome”.

Despite some anomalies, the concept of Cotard’s Syndrome passed into psychiatric language with successive generations of psychiatrists educated in the apparent uniqueness of these interesting and persisting delusional beliefs. With the advent of improved treatments - most notably electro-convulsive therapy (ECT) - clinical observations have suggested that Cotard’s original concept may no longer be appropriate. It is therefore timely to review what the syndrome has come to mean and how it stands, a century after its original description.

## THE CONCEPT REVIEWED

Cotard’s original work, entitled “*Du Délire Hypochondriaque*” (1880), described a particular type of hypochondriacal delusion. The female patient affirmed “*qu’elle n’a plus ni cerveau, ni nerfs, ni poitrine, ni estomac, ni boyaux..*”. All that was left of her was the skin and bones of a disorganised body that no longer required food

to live. She no longer had a soul, God did not exist, the devil was no more. She could not die a natural death. She would exist eternally, the eternal fire being the only possible end for her. Cotard noted that, some years earlier, Baillarger (1860) had drawn attention to the extreme hypochondriacal delusions of patients with general paralysis. While the delusions expressed by Cotard's patients were not identical, they were "analagous". Likewise he compared these patients to those with "Demonomania" in the earlier writings of Esquirol (1838) and to similar observations of Morel (1853) and Krafft Ebbing (1878). Typically these patients believed demons dwelt within their bodies, tortured them in a variety of ways and, that they would never die. While Cotard expressed surprise that a mental disorder with such marked characteristics had not attracted more attention he went to great lengths to distinguish these hypochondriacal delusions from either those of persecution or damnation. Patients with the latter feel their organs attacked from outside forces, while the former believe their bodies to be in a disorganised state which prevents them ever being able to die. Typically his patient was in a state not of life or death but in a living death : "ils sont dans un etat qui n'est ni la vie, ni la mort; ils sont morts vivants".

Cotard concluded his first description by outlining 6 characteristics of these patients:

- (1) anxious melancholy
- (2) ideas of damnation or possession
- (3) a propensity towards suicide and self mutilation
- (4) analgesia
- (5) hypochondriacal ideas of non-existence or of destruction of various organs, the entire body, the soul, God etc.
- (6) ideas of never being able to die.

Two years later (1882), he expanded his ideas and suggested for the first time the name “Délire de négations”. The “negativistic” tendency of mentally ill people had earlier been reported by Leuret, Guislain and, most incisively, by Griesinger. Griesinger described a spectrum of negativity in melancholia beginning with ideas of subjective change, leading to objective change in outside things and culminating in “a dream state in which, at its peak, the real world seems to have disappeared completely, or to be dead ..... there remains only the cruel imaginary world in which he finds himself”. These descriptions fitted quite closely with Cotard’s observations. Consequently for those patients “in whom the tendency to negation is carried to the extreme” Cotard suggested the name “Nihilistic Delusions” (ND). As in his earlier paper he distinguished these patients from those with persecutory delusions. The latter he contended, do not suffer “the deep depression or crushing anxiety of true melancholics”. They blame outside forces such as food, medicine or electricity, while the melancholic accuses himself, the factors which contrive against him are internal. It is from this deep disturbance “in the very soul” of true melancholics that nihilistic delusions emerge. In terms of descriptive writing, few authors have described this state - of true melancholia - better than Timothy Bright (1586), in his “Treatise Of Melancholy” :

*“the patient is given to fearful and terrible dreams; in affection sad and full of feare, hardly moved to anger, but keeping it long and not easie to be reconciled; envious and jealous, apt to take occasions in the worst part, and out of measure passionate, whereto it is moved. From these two dispositions of brayne and heart arise solitariness, mourning, weeping, and melancholic laughter, fighting, fobbing, lamentation, countenance demise, and hanging downe, blushing and bashful, of pace, flow silent, negligent refusing the light and frequency of men, delighted more in solitariness and obscurity.”*

Despite his excellent clinical descriptions, Bright adhered to the popular view of the time that mental illness resulted from physical disruption of the “Humours”.

The spleen was the seat of melancholy from where it flowed to the stomach causing diminished appetite, slowing of the bowels and other sequelae.

While Cotard stated that the presence of ND alone did not denote a special kind of melancholia, he believed that these delusions together with a number of associated symptoms constituted a true illness distinct in its characteristics and development. Accompanying the ND (such as believing they no longer had a brain, a stomach or a head) patients frequently believed either they would never die or that they were already dead. The latter was more common in those with stupor while the former was found where anxiety and agitation were prominent. Altered states of sensation, either anaesthesia or hyperaesthesia were noted in some patients. Mood congruent auditory, visual and olfactory hallucinations frequently accompanied the delusional beliefs:

*“he hears the preparations for his execution, the guillotine being erected; he sees the rope which is to hang him; some imagine they are rotting away, that they are being offered faecal matter or human flesh”.*

The content of these hallucinations typically confirmed the delusional ideas. These patients according to Cotard, have “a morbid need for mutilation, destruction and total annihilation”; though they may state that they are dead or, are immortal, they are prone to acts of bizarre self-mutilation. Not uncommonly they believe fire is the only element capable of harming them.

The development of the illness too was characteristic. The onset was sudden, often in middle age and usually in people with no past history of overt mental illness. Though sudden recovery did occur, most notably in those with the stuporose type, for the majority, the illness was recurrent and chronic. Even where an improvement in mood occurred the delusions frequently remained in their original

form and with the same intensity. In contrast to other forms of insanity where the morbid personality picture represents a marked change from the healthy state, Cotard asserted that the “morbid condition” seen in this illness was an exaggeration of the patients previous personality:

*“they have always been rather melancholy, taciturn, dedicated to good works....timid, self-effacing and harder on themselves than on other people”.*

While Cotard’s paper is chiefly descriptive he alludes to possible aetiology by acknowledging the similarity to delusions seen in organic states such as general paralysis and encephalitis, and, in other functional states such as hysteria. He also accepted that complicated cases, in which ND and persecutory delusions co-exist, were not un-common. He does not however attempt to draw these differing strands together to explain the common psychopathology.

It is noteworthy that it is to Griesinger, whose work Cotard quotes to support his own, that the dictum “mental diseases are brain diseases” is attributed. In his textbook of psychiatry (1867) he adopted an organic approach to the understanding of mental illness. Moreover he suggested a specific cerebral localisation might be found for each individual symptom.

To summarise Cotard’s findings: he described a particular type of melancholia of sudden onset in middle age, in people of previously sound mental health though of rather melancholic personalities; the illness was characterised by extreme delusional negation in which patients denied the presence of various bodily organs, denied their existence (by claiming to be dead) or denied the existence of the external world. Anxious agitation or stupor accompanied these beliefs as well as hallucinations in various modalities, altered sensation and bizarre attempts at

self-destruction. Though spontaneous remission occurred, the most frequent outcome was a state of chronic insanity with little change in the intensity of the nihilistic beliefs.

## **Chapter 2. LITERATURE REVIEW**

### **(1) COTARD'S SYNDROME**

Subsequent development of Cotard's ideas has been left almost entirely to European psychiatrists, chiefly his French compatriots. While Cotard argued for a separate classification for his category of patients it was Régis and Séglas who, a decade later, gave the eponymous title "the Cotard Syndrome". Cotard, Séglas and Régis thus became the three "parents" of this unique condition (EY,H. 1950).

In 1892 a Congress of Neurologists failed to decide whether Cotard had described a distinct syndrome or merely a symptom which occurred in a variety of organic and functional states. Subsequent papers on the Cotard syndrome, case reports for the most part, have questioned many of the original criteria as well as the validity of the concept.

#### **(a) Age of Onset**

The typical patient with ND was said to be middle-aged. Lewis (1934) in his classic study of depressed patients examined in great detail 61 cases judged clinically to have a primary depressive disorder (those with evidence of organic brain disorder or schizophrenia were excluded). From this work he concluded that nihilistic delusions may be "quite absent from the agitated melancholic of the involuntional period and present in young people.". This view was re-enforced by Stenstedt's study (1956) of "Involuntional Melancholia" in which ND were found in only 10% of cases. Though rare, Cotard's syndrome has been reported in adolescence and early adulthood [Mignot (1937), a girl aged 20 years; Halfon (1985), a boy aged 16

years] allowing one author to emphasise the occurrence of non-schizophrenic psychosis in this age group. Degiovanni (1987) described two cases. The first, a girl aged 19 years, asked to have her chest opened so her lack of organs could be confirmed; she no longer had any veins, any circulation. The other, a cachectic girl of 22 years believed she was dead; neither she nor her parents existed. In both cases an episode of anorexia nervosa had preceded the nihilistic condition, in the first by a few years, in the second by a few months.

### **(b) Aetiology**

While Cotard highlighted the melancholic features and differentiated his group of patients from those with persecutory delusions, early reports suggested that ND occurred in a variety of other conditions.

#### **(i) Organic**

Prior to Cotard's paper, ND had been described by Baillarger in cases of general paralysis and typhoid fever. Voisin & Burleaux (1880) reported a further four cases. One patient stated his organs were obstructed, another that they were absent, another denied the existence of his personality, while the fourth believed he had shrunken in size. Similarly the association between organically disturbed brain function and body image delusions, particularly hypochondriacal delusions (HD), were reported by Mondrie (1885) in cases of epilepsy, Dupouy (1924) in encephalitis and Cuel (1923) in dementia. More recently the importance of organic factors in the aetiology of Cotard's syndrome has been argued by Ahleid (1968). His contention was based on three cases (all male, aged 65, 62 and 60 years) each of whom had an organic component. The first was alcoholic, the second syphilitic while the third showed evidence of arteriosclerosis. Apart from the obvious organic evidence, Ahleid asserted that the age of these cases supported the view

that organic brain changes were intimately involved in the genesis of these delusions. More recently, Drake (1988) described three patients with transient Cotard features. In all three, right frontotemporal pathology was demonstrated; this was neoplastic in one, atrophic and post-traumatic in the second, and post-infarction in the third.

#### (ii) Functional illnesses

Henne (1966) described several features of the syndrome in a frankly manic patient who also showed some classical depressive symptoms. Excitation, insomnia, depersonalisation and ideas of immortality alternated with hypochondriacal preoccupations and suicidal ideation. The latter developing out of her wish to end her immortal existence. In reviewing the history, the author concluded that the case was impossible to classify but organic, neurotic and hereditary factors undoubtedly played a part.

#### (iii) Depersonalisation

Throughout the descriptions of Cotard's Syndrome an initial period of subjective negation is emphasised. Later the patient goes on to develop ideas of objective negation. This feature has led many authors to suggest that depersonalisation, the sense of unreality of one's own body, plays a key role. This relationship was discussed by Henderson & Gillespie (1944) who, among others, emphasised the non-delusional quality of the latter and hence the retention of insight. "Ideas of unreality are probably sometimes psychologically related to nihilistic delusions, but they are not delusional, the patient recognising their abnormality and complaining of the distress they occasion". The nihilistic patient states "I do not exist" while the depersonalised patient says "I feel I do not exist" or "it's as if I do not exist". That Cotard syndrome is the expression of an extreme depersonalised

state was equally criticised by Agostini & Wenzel (1954). Failla et al (1962) suggested that there were three types of depersonalisation, autopsychic (in which the ego is detached from reality), somatopsychic (in which there is negation of parts of the body), and allopsychic (in which the individual is detached from all perceptions). In their view Cotard's syndrome could be best understood as a somatopsychic depersonalisation.

Despite these anomalies psychopathologists have emphasised the necessity of an underlying melancholic state for the development of the complete Cotard Syndrome. In all descriptions of "Cotard patients" two essential elements appear: concern with bodily function or image and the denial of existence, either of a body part or the external world. The first relates nihilistic delusions to hypochondriacal delusions while the second is reminiscent of denial of defect - anosognosia - seen in patients with right cerebral dysfunction.

## (2) NIHILISM V'S HYPOCHONDRIASIS

It is salutary to re-examine Cotard's original description in the context of 19th century European psychiatry. The association of melancholy with physical disturbance of body systems has a long and distinguished history. Aristotle is said to have noted that great men are inclined to be melancholic and hypochondriac (Maudsley 1899). Burton (1651), in his classic text "Anatomy of Melancholy", described hypochondriacal melancholy thus:

*"besides fear and sorrow, sharp belchings, fulsome crudities, heat in the bowels, wind and rumblings in the guts, vehement gripings, pain in the belly and stomach...cold sweat..cold joints, indigestion, ..midriff and bowels are pulled up, the veins around their eyes look red, and swell from vapour and wind".*

Mandeville (1711), a London practitioner, in his book on mental illness (written primarily for his patients), described his own episode of melancholy complete with the delusion that he had syphilis:

*“it is no longer ago, than last winter, That I could not be persuaded, but that I was pox’d to all intents and purposes.....The losing of my nose, my palate, my Eyes and all the Fright and shameful Consequences of that Disease possess’d my fancy”.*

While abnormal mental states were linked with pathology in the organs of the hypochondrium, it was not until 1822, with the work of Falret, that the term “Hypochondriasis” became clearly linked with a morbid preoccupation with physical health. The beliefs of these patients vary in intensity such that the classification of hypochondriasis along the neurotic/psychotic divide has been problematic; most likely a continuum exists without a sharp border. The chronicity of the hypochondriacal state and the persistent negativistic attitude of such patients occupied the minds of many nineteenth century psychiatrists. Falret described “mental hypochondria” as melancholia without delusions. Cotard reviewing the case material presented by Falret, concluded that these were the very patients who would later develop nihilistic delusions. They already had a nihilistic mental state:

*“they long for the intellectual capacity they used to have, the feelings which have been extinguished and the energy which they have lost completely”.*

Cotard also drew analogies with the hypochondriacal delusions in patients with general paralysis described by Baillarger.

*“The hypochondriasis is like a rough sketch which with its lines accentuated and its shades darkened, would present a finished picture of these more advanced forms of melancholia”.*

Thus Cotard suggests a link between hypochondriasis and nihilism and intimates that one may be an extreme form of the other i.e. one may progress from believing one's stomach is diseased to the belief that it no longer exists. As the condition intensifies the veil thickens until finally the real world is blotted out.

The factors that cause a patient to move along a possible continuum are less easy to elucidate from the writings on either HD or ND. The underlying diagnosis in both is varied. Ladee (1966) analysed the records of 225 patients with hypochondriasis; 107 were classified as deluded. In decreasing order of frequency the diagnostic categories were schizophrenia, episodic schizophreniform psychosis, manic depressive psychoses, involutional melancholic hypochondria, other hypochondriacal psychoses, hypochondria with depression, anxiety and delusional development. A follow-up study of patients with delusional psychoses compared the outcome of those with HD with that for other types of delusions (Opjordsmoen, S. & Retterstol, N. 1987). The authors found that the course and outcome were mainly dependant on the diagnostic category rather than the type of delusion.

### **(3) ANOSOGNOSIA : A NIHILISTIC DELUSION ?**

“Non, Je ne suis pas paralysee, c'est la main de mon mari”. This was the title of a paper from a neuropsychology centre (Assal G., 1983) describing an 86 year old

lady with a left hemiplegia who vehemently denied her neurological deficit. Whenever her attention was drawn to the paralysed limb, she denied it was hers insisting instead that it belonged to her husband.

Denial of neurological defect has been described in cortical blindness (Von Monakow, 1885) and lesions of the right cerebral hemisphere, most notably the parietal lobe (Pick,1898; Anton,1899; Babinski,1914; Macdonald Critchley,1964). Babinski ascribed the term “anosognosia”, meaning lack of knowledge or recognition of disease. Despite the associated sensory loss in cases of hemiplegic anosognosia, the phenomenon cannot be explained on this basis as the patient typically ignores all evidence presented to him in favour of a delusion. Schilder (1935) believed the organic factors present caused an “organic repression” analagous to psychic repression. Delirium has been documented in the most florid cases, the delusions evaporating as the delirium recedes. The delusional beliefs in most cases are transient, in contrast to true Cotard delusions, though some have persisted even until death. Thus patients with anosognosia deny neurological defect and may deny the existence of the paralysed part while ND patients deny the existence of non-diseased organs.

## Chapter 3. STUDY

### (1) QUESTIONS

From the above review we are left with the following thoughts: Considerable confusion appears to exist about Cotard's Syndrome in three main areas : (a) Incidence, (b) Phenomenology, (c) Aetiology.

#### (a) Incidence

The studies discussed above are all based on single or series of collected cases studies. As far as can be ascertained no attempt has previously been made to examine the incidence of ND or Cotard's Syndrome, among psychiatric admissions.

#### (b) Phenomenology

The distinction between ND and Cotard's syndrome has become blurred; the presence of ND has increasingly led clinicians to apply Cotard terminology, often in cases where none of the secondary features, such as ideas of immortality etc. exist. These delusions appear to overlap with depersonalisation and the anosognosias as well as depressive beliefs. Their close relationship to HD would appear phenomenologically sound though clinical experience implies differences in patient type and treatment response. How are they related ? Is one a more extreme version of the other ?

### **(c) Aetiology**

While Cotard asserted that the psychopathology emanated from a deep-seated depression, ND have been described in schizophrenia, mania, acute and chronic confusion, focal organic brain syndromes and chronic alcohol abuse. As a result their structural relationship to depression has been questioned and an organic aetiology hypothesised. When compared with other mood congruent delusions, these delusional beliefs are further set apart by the frequency of cases where they remain fixed in their original form and intensity, long after the depressed mood has lifted. Using modern diagnostic techniques, how does Cotard's Syndrome and the phenomena contained therein, fit with 20th century classification systems ?

Un-answered questions in these three areas have diluted the validity and usefulness of the original concept. Its significance is questioned in modern psychiatric practice where most seriously ill patients are seen rapidly, and given more effective treatments. Apart from its historical interest what relevance does it hold for modern psychiatry ? To look at these questions in more detail and to attempt to answer some, the following study was undertaken.

### **(2) STUDY AIMS**

Against the background described above the aims of the present study were :

- (a) To describe the frequency and diagnostic distribution of nihilistic delusions in a psychiatric hospital population a century after Cotard described his syndrome.
- (b) To describe the clinical attributes and prognosis of these patients and phenomenologically compare them to Cotard's original subjects.

- (c) To confirm or reject the phenomenological description of this rare condition.
- (d) To determine whether possession of these symptoms is a marker of covert organic disease and examine the possible relationship to anosognosia and parietal lobe dysfunction.
- (e) To examine two representative samples of patients, with Hypochondriacal and Nihilistic delusions respectively, and compare them using standard measures for the presence of any distinguishing variables. Given that both conditions entail altered body experiences, does a continuum exist ?

### **(3) METHODOLOGY**

For a period of one year: all patients, independent of age, diagnosis or previous psychiatric history, admitted to the acute wards of five psychiatric units, who expressed nihilistic or hypochondriacal delusions were assessed for inclusion in the study. In addition long-stay patients with these delusions were sought to add to the phenomenological data. The hospitals served a total catchment population (ie. all ages) of 1.12 million people and participated in The Royal Free and Friern Hospital Rotational Training Scheme in Psychiatry. Prior to commencement of the study ethical approval was sought and granted from the Medical Ethics Committee on each site. In addition permission to assess patients under his/her care was requested from each Consultant Psychiatrist. Preliminary patient consent was arranged by the Junior doctor in each case. A formal consent agreement was subsequently signed by each subject after explanation and clarification by the author.

### **(a) Referral procedure**

At a rotation wide meeting attended by the majority of junior trainees, the protocol of the study was presented and their active participation in referring patients for assessment was sought. On each site a named representative whom the trainees could contact was available. In addition a letter, outlining the purpose of the study and in particular the inclusion criteria, was sent to all junior and higher trainees as well as consultants. At three monthly intervals further reminders were sent which again explained the inclusion criteria and referral procedure. As new trainees joined the training scheme they were sent information on the study. Colleagues could refer patients via their representative or directly. An Ansafone number was available in addition. In the majority of cases the referral was discussed directly with the junior doctor caring for the patient prior to assessment. Often colleagues would make contact, unsure whether a formal referral was appropriate.

### **(b) Inclusion Criteria**

For the purpose of the study a Nihilistic Delusion (ND) was defined as:

*“a fixed delusional belief in which the patient denies the existence of part or all of self (eg. I have no stomach...no blood; I am a ghost...I am dead) or of the outside world (eg. the world does not exist....everything is nothing)”.*

A Hypochondrical Delusion (HD) was defined as:

*“an un-realistic fear, or belief of having a disease which persists despite medical reassurance and evidence to the contrary and causes impairment in social and occupational functioning”.*

To ensure all possible subjects were included, colleagues were instructed to refer for consideration, any patient expressing hypochondriacal or nihilistic ideas, not necessarily of delusional intensity. Patients were accepted for inclusion independent of age, primary diagnosis, past psychiatric history, previous admissions, or organic confusion.

### **(c) Assessment Procedure And Measures**

Following referral, all patients were to be assessed (by CK) on their admission ward within one week. The assessment was in four parts:

#### **(i) History**

A full formal psychiatric history was taken with particular reference to any family history of affective/psychotic illness and any evidence of birth trauma or head injury to the patient. The criteria used in this research for a positive psychiatric history were:

- (a) The illness was sufficiently serious to cause impairment in occupational functioning eg unable to go to work, unable to do housework, requiring the support of others to do activities of daily living
- (b) The illness was of at least 2 weeks duration
- (c) The person was seen and treated with physical treatment(s) by either a psychiatrist or the family General Practitioner.

All three criteria had to be met. In addition the following features were looked at in detail:

- Pre-morbid personality and early development
- The age of onset of psychiatric illness

- Evidence of personality change
- The temporal relationship of the delusions to the onset of the illness
- The form and content of the delusions
- The presence of secondary Cotard features
- The treatment response, including the length and type of treatment; previous admissions and relapse rate.

Wherever possible the interview with the patient was substantiated by information from a family member or friend.

#### (ii) Mental State Examination (MSE)

At the initial interview in each case, MSE was performed using the standardised Present State Examination (PSE), (Wing et al 1974). When this proved unsuccessful repeat examination was arranged at a later date. Using the Catego Programme the results were analysed by the Medical Research Council Social and Community Psychiatry Unit at the Institute of Psychiatry, London. In the analysis a technique for defining a "case" - the Index of Definition (ID) was used. This is derived by the application of a set of rules for deciding 8 levels at which syndrome information is available that could be used to recognise the familiar functional psychoses and neuroses. A high level on ID improves the degree of certainty with which a diagnosis can be made.

#### (iii) Physical Examination and Investigation

A complete physical examination was performed (by the author) on all subjects, to document any medical problems but especially to collect evidence of central nervous system disorder. Haematological investigations including Erythrocyte Sedimentation Rate (ESR), Full Blood Count (FBC), Urea & Electrolytes (U's &

E's), Liver & Thyroid Function Tests (LFT's & TFT's), and Syphilis Serology (VDRL) were performed. Patients routinely had a Chest X-Ray and Electrocardiogram (ECG) on admission. To examine for intra-cranial pathology all patients were asked to consent to neuroradiological investigation using Computerised Axial Tomography. An independent expert blindly rated each scan for the following: (a) enlargement of the Interhemispheric and Sylvian fissures, and Lateral and Third ventricles; (b) the degree of sulcal widening in the Frontal, Temporal and Parietal cortex and (c) calcification in the Choroid Plexus. In (a) and (b) a 3 point scale was used i.e. 1 = mild, 2 = moderate, 3 = severe. By adding the total (a) & (b) scores a "total atrophy score" was calculated for each patient.

#### (iv) Psychometric Assessment

Patients were examined for cognitive impairment using The Middlesex Elderly Assessment Of Mental State (MEAMS), a screening instrument designed to differentiate between functional and organic cognitive deficit in the elderly. The major areas of cognitive performance are systematically surveyed using 12 brief sub-tests. These are: (1) Orientation, (2) Name learning, (3) Naming, (4) Comprehension, (5) Remembering pictures, (6) Arithmetic, (7) Spatial Construction, (8) Fragmented letter perception, (9) Unusual Views, (10) Usual Views, (11) Verbal Fluency, and (12) Motor perseveration. A score of 0 or 1 is given giving a maximum score of 12. Subjects scoring 10 - 12 are performing within the range expected for the normal elderly. Those scoring 8 or 9 are scoring within the borderline range and should be assessed more closely bearing in mind factors such as pre-morbid level of intelligence, physical health, and mental state. Subjects scoring less than 7 require more detailed examination of cognitive function.

(v) Diagnosis

The clinical diagnosis given by the Consultant in charge of the patient was recorded. Patients were later assigned a PSE diagnosis based on computer analysis of the PSE data, using the CATEGO programme. From this analysis an ICD 8 classification was also sought for each subject.

(vi) Statistical analysis of data

Statistical analysis was performed using the Microsoft Excel 4.0 computer software.

# Chapter 4. RESULTS

## (1) SUBJECTS

Over a period of one year 18 patients with probable hypochondriacal delusions (HD) and 25 with probable nihilistic delusions (ND) were referred by local psychiatrists for assessment. Of these, 16 patients with HD and 15 with ND, making a total of 31 patients, satisfied entry criteria and were included in the study.

Two patients referred as nihilistic had HD. Twelve of the referred patients were excluded (Table I): the beliefs of 6 patients (3 nihilistic and 3 hypochondriacal) did not satisfy the criteria for a delusion; 4 patients were too disturbed to be interviewed and 2 of the nihilistic group absconded from hospital before assessments could be carried out.

From medical and nursing case note examination and discussion with ward staff five of the excluded patients referred as probable ND were likely to be cases. Written examples of their beliefs include: "I've no insides, my backbone has been taken away", "bits of my body are not there.....the cleaning woman has hoovered up my legs and arms". These five patients were similar in age and sex distribution to those included in the study; there were four females and one male with a mean age of 54 years (range 22 - 70). Amongst the fifteen study patients with ND there were twelve females and three males with a mean age of 55 years (range 22 - 79).

The assessment interview was carried out in the first week of admission in 20 of the 31 patients. In 6 patients the initial interview was postponed on the advice of

the patient's ward doctor and for 5 patients, all of whom had ND, the interview had to be rescheduled because of the patient's distress at the time of interview.

**TABLE I**  
**PATIENTS REFERRED**

<b>HD</b>	<b>ND</b>
<b>Total referred: 18</b>	<b>Total referred: 25</b>
2 "ND" had HD: +2	2 "ND" had HD : -2
3 not deluded: -3	3 not deluded : -3
1 too ill : -1	3 too ill : -3
	2 absconded : -2
<b>Total included in study : 16</b>	<b>Total included in study: 15</b>

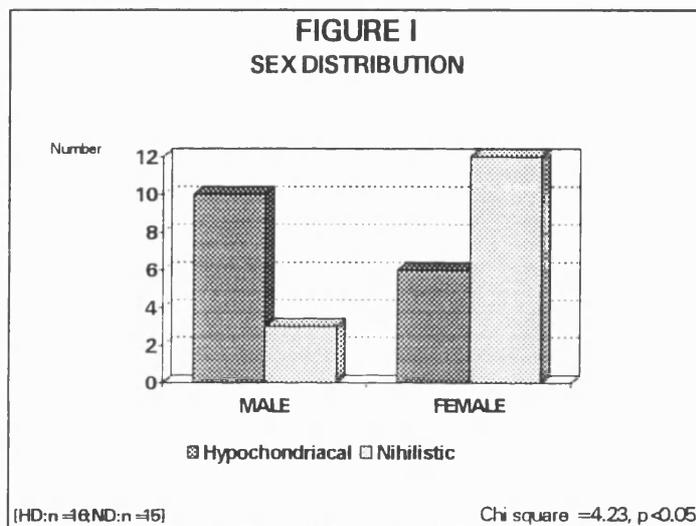
## **(2) INCIDENCE**

An admission incidence rate for the two forms of delusion among acute psychiatric admissions from five psychiatric units covering a catchment population (all ages) of 1.12 million people was calculated with the denominator as the total number of admissions, during the study year, to the units. The rate for Hypochondriacal delusions, for all those referred by local psychiatrists, was 5.6 per 1000 admissions and for Nihilistic Delusions, the rate was 7.7 per 1000. Three HD and four ND patients were already admitted to hospital before the beginning of the study. Taking only new patients admitted during the year, the incidence of HD was 4.3 per 1000 admissions per year while that for ND was slightly less at 3.4 per 1000 admissions per year.

### (3) GENERAL DEMOGRAPHIC DATA

#### (a) Age & Sex Distribution

There was a significant difference in the sex distribution of the groups (**Figure I**); those with HD were mostly male (10 male : 6 female) while the nihilistic group were predominantly female (12 female : 3 male),  $p = 0.0176$  (Fisher's exact test).



The age of each patient, on their last birthday, was recorded at the time of assessment. There was a trend for the HD group to be older with 69% (11/16) compared to 40% (6/15) ND over 60 years. The mean age (TableII) of those expressing HD was significantly greater than those with ND ( $t = 2.05$ ;  $p < 0.05$ ).

**TABLE II**  
**AGE AT INTERVIEW**

	HD (Years) n = 16	ND (Years) n = 15
Mean	67.81 *□	55.46 *
Median	69	52
Standard Deviation	15.6	15.48
Minimum	36	22
Maximum	88	79

\* t = 2.05, p < 0.05

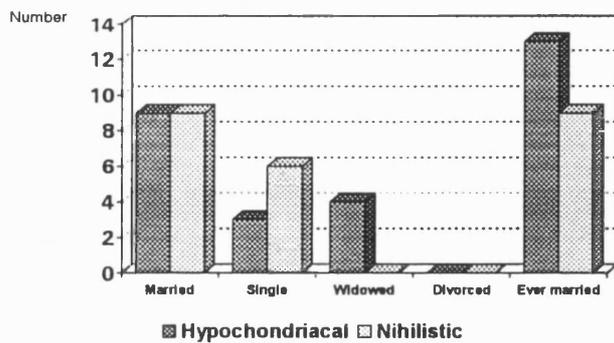
**(b) Where seen**

The majority of patients in both groups were in-patients. Four with HD and two with ND were attending day hospitals. These patients had relatively encapsulated delusions which allowed them some measure of independent living.

**(c) Marital status, Social class, Education**

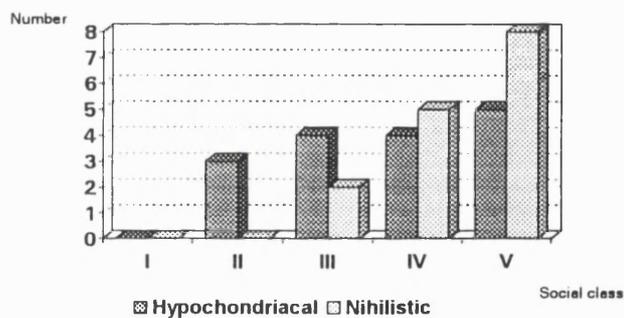
The majority of patients in both groups were married (**Figure II**) - though a greater number of ND patients had remained single -and came from social classes III, IV and V (**Figure III**). While ethnic minorities were more represented in the ND group the majority in both groups were British (**Figure IV**).

**FIGURE II  
MARITAL STATUS**



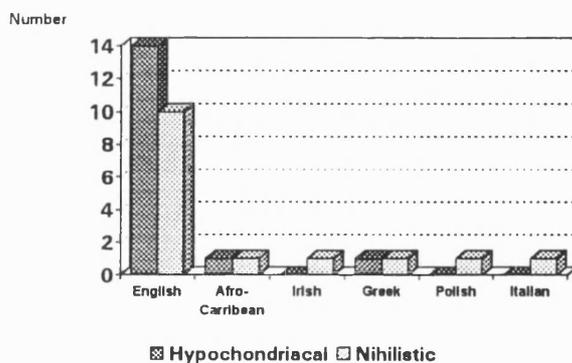
[HD:n =16;ND:n =16]

**FIGURE III  
SOCIAL CLASS**



[HD:n =16;ND:n =16]

**FIGURE IV  
ETHNIC ORIGIN**

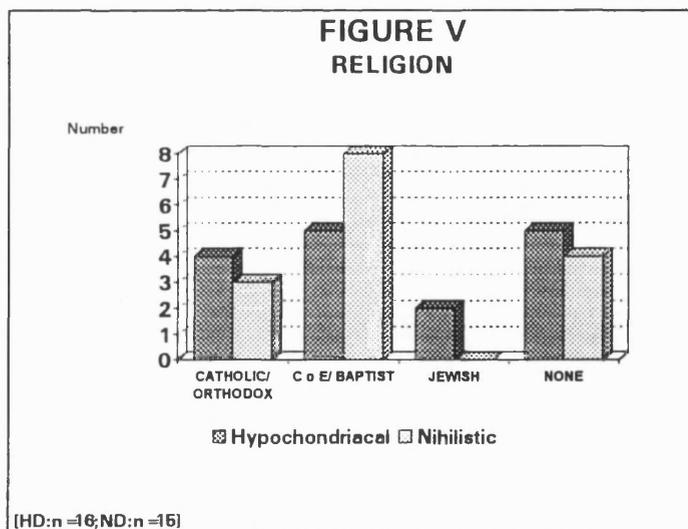


[HD:n =16;ND:n =16]

The two groups were similar in the number of years spent in formal education. The mean school leaving age was 14.9 years for the HD group (median = 14) and 15.1 years for the ND group (median = 15). In terms of educational achievements, 14 (88%) of the former and 12 (80%) of the latter had left school without any formal qualifications. A small number had some CSE's while one man in the HD group had a Diploma in Business Studies.

**(d) Religious Beliefs**

Because some body image delusions consist of unusual beliefs of life and death, in particular a fear of immortality as described by Cotard, patients were questioned on their underlying religious beliefs. Almost two thirds of the HD and three quarters of the ND group belonged to Judeo-Christian religions (**Figure V**) - the remainder were atheist. The number who continued to practice their religion was similar in the two groups, 5/11 HD and 6/11 ND. Only one patient (ND 10) overtly linked the cessation of her religious practice to her (nihilistic) delusional beliefs.



**(e) Head Injury / Brain damage / Fits**

Factors that might be implicated in causing organic brain damage were enquired for in detail.

**(i) Maternal age at birth**

The majority of mothers were aged less than 35 years at the patient's birth (Table III).

**TABLE III**  
**MATERNAL AGE AT BIRTH OF PATIENT**

Age Group	HD n = 16	ND n = 15
< 30 years	9	8
31 - 35	3	2
36 - 40	3	2
> 40	0	1

**(ii) Birth History**

3 out of 15 HD patients gave a history of birth difficulties; forceps were used in two while the third was born premature and weighed 2 1/2 pounds. The latter remained 2-3 weeks in hospital after his mother was discharged while the former patients were discharged home with mother. One HD patient was unsure of his birth details. Of the ND patients, two were unable to give details of their birth history. The remaining 13 recorded no birth difficulties though 2 of this group

were not discharged home with mother; the cause was unknown in one while the mother of the second was admitted (for nine months) to a psychiatric hospital.

### (iii) Head Injury

Careful enquiry was made in each case for any history of head injury and sequelae. Three of the HD group (n=16) and four of the ND group (n=15) reported a past history of head injury which required hospital attendance in each case. Of these, 5 had been involved in a road traffic accident and 2 in domestic accidents. In all but one there was a period of loss of consciousness, ranging from "a few minutes" (5) to "approximately one hour" (1). The latter patient suffered anterograde amnesia. No patient reported post-traumatic amnesia.

These injuries had all occurred when the patients were aged 16 to 26 years. The shortest interval between head injury and the first psychiatric admission was 17 years. Following the head injury, none of these 7 patients suffered overt neurological sequelae.

### (iv) Fits

Two ND patients had a history of fits; one suffered from epilepsy since adolescence. The other (ND:6) had benign intracranial hypertension diagnosed and treated in 1965 following a number of grand mal fits. She began expressing nihilistic delusions shortly after and was transferred to a psychiatric hospital.

#### **(f) Subjective Memory Problems**

Ten HD and five ND patients complained of memory difficulties (Table IV). In the former, short term memory (STM) was mostly affected while in the latter group short and long term memory (LTM) problems were reported.

**TABLE IV**  
**SUBJECTIVE MEMORY IMPAIRMENT**

	<b>HD</b>	<b>ND</b>
	n = 16	n = 15
No Memory Problem	6 (38%)	10 (67%)
Short-Term Only	9 (56%)	2 (13%)
Long-Term Only	0	2 (13%)
STM & LTM	1 (6%)	1 (7%)

#### **(4) PHENOMENOLOGY (I) - NIHILISTIC GROUP**

One of the main aspects of the study was to examine the phenomenology of Cotard's Syndrome, a century after it was described. In particular the study aimed to examine more closely nihilistic delusions, thought by many to be pathognomonic of this condition.

Table V shows the prevalence of classic Cotard symptoms among the nihilistic group. The overwhelming characteristic of these patients was their fully formed delusional beliefs of non-existence.

**TABLE V**  
**PREVALENCE OF COTARD SYMPTOMS IN ND GROUP (N=15)**

Symptom	Number n (%)
ND - Content	
(i) Deny Part Of Self	15 (100)
(ii) Deny Existence Of Self	14 (93)
(iii) Deny Existence Of External World	2 (13)
Ideas Of Immortality	10 (67)
Ideas Of Damnation / Possession	6 (40)
Ideas Of Enormity	1 (7)
Depression	11 (73)
Self-Mutilation / Suicide	3 (20)
Analgesia	0 (0)

(a) Denial of existence/function of self

All patients denied the existence of part of themselves. Most commonly they complained that either their intestines or their head did not exist. In addition, some patients believed that they no longer possessed other elements, such as blood. Examples include:

*"I haven't got any intestines or stomach"*

*"there's nothing inside my skin"*

*"a man strangled me two years ago and ever since I've no organs, no brain, no blood....I've just dried up"*

*"I'm a living skeleton..all my head is a block of wood, my eyes no longer move or see"*

(b) Denial of life

The majority of the nihilistic group believed that they were dead or did not exist in the real, external world, for example:

*"look at that dead wrist....I am dead...I was buried on January 5th"*

*"I'm dead, I've no body....I ain't got nothin'"*

*"I'm a non-person ....the walking dead"*

Paradoxically, two-thirds of the patients also believed that they would live forever though, to most, this seemed a state of neither death nor life. It was often associated with feelings of damnation:

*"I'm a zombie..it will always be like this...for eternity"*

*"I'd like to die but it's impossible.....doctors told me years ago I'd never die"*

*"I'm damned to live forever .....I'll be thrown on the fire but I can never die"*

A particularly distressed lady stated:

*"Take me to the operating theatre and take my head off and bury me. I'm suffering so bad...I know I can't die but I'd be better off if you took off my head".*

Another patient who had contemplated suicide said:

*"Without my spirit I'll have an eternal hell; even if I die I'll never find peace. Suicide for me wouldn't be a way out.....I'm trying to hang on to life because without that I'll be tortured for eternity".*

(c) Denial of the outside world

Only two patients overtly denied the existence of the external world:

*“Look out there (pointing to the hospital grounds) there used be life there; now there’s nothing, like me..... nothing”.*

This patient had associated Capgras phenomena. A second patient believed she would never leave hospital as her family and “everything outside” had gone, all that was real was the hospital and her torment.

(d) Ideas of enormity

One patient, denied that he ever existed but believed that, if he urinated, he would flood not only the hospital but also the world:

*“How can I ?...If I pee I’ll flood the Royal Free (Hospital)..... and more”.*

(e) Suicide Attempts

Self-harm occurred in three (20%) of those with ND. One patient was admitted via casualty in a comatose state. Two nihilistic patients who self mutilated did so in an attempt to establish body existence. Both patients smashed glass windows, one to test if she had any blood; the other to discover if she “had a body”.

(f) Depression

Cotard described the typical mood state of his patients as that of anxious melancholia which perhaps, modern psychiatrists would recognise as agitated

depression. Eleven of the ND patients had a clinical diagnosis (ascribed by their Consultant psychiatrist) of depression and four were diagnosed as having schizophrenia. It was not possible to distinguish phenomenologically these two groups by means of core Cotard symptoms. The schizophrenic patients did however have other psychotic symptomatology.

## **(5) PHENOMENOLOGY (II) - HYPOCHONDRIACAL GROUP**

The definition of an Hypochondriacal delusion (HD) used in the study was:

*“an un-realistic fear or belief of having a disease, which persists despite medical reassurance and evidence to the contrary, and causes impairment in social and occupational functioning”.*

16 patients had abnormal beliefs which satisfied these criteria.

**TABLE VI**  
**HYPOCHONDRIACAL DELUSIONS - CONTENT (n=16)**

<b>Delusion - Content</b>	<b>Number</b>
Cancer Of Gastro - Intestinal Tract	8
Venereal Disease	3
Aids / Cancer	1
Leukaemia	1
Disease In Head	2
Tumour In Palate	1

Half the HD group were pre-occupied with the belief that they had cancer somewhere in the gastro-intestinal tract; five were definite that it was cancer of the bowel (Table VI). One believed he had a “total body disease” caused by cancer of the colon; the effect of this cancer was to leave him “exhausted for hours” after a bowel movement. Another patient’s illness was characterised on each admission, by the certain belief that she had cancer of the throat.

Three patients - two male and one female - believed they had a venereal disease. Both men complained they had contracted the disease in their youth but, despite treatment, they believed that the disease was now undermining their “entire body systems”. The female patient, though diagnosed in the past as schizophrenic, had mood congruent depressive hypochondriacal delusions. Her belief that she had venereal disease was confirmed for her by second person auditory hallucinations, in which voices told her she was “dirty” and a “prostitute”.

Two patients, both female, believed that they suffered from a disease in their head. One believed she “must have a hole” in her head through which a disease had got in and affected her brain; the other asked for a brain scan so her illness could be properly diagnosed. The latter patient’s beliefs had a nihilistic quality which at first raised doubts about classification:

*“It’s as if I’m not there ....like a zombie or something. I sat at home and wanted to go out into the garden but could’nt; I had no will, no movement. It’s terrible and there’s no end to it. I tried to kill myself but it made no difference.. there’s no end to it”.*

Despite the nihilism contained in her beliefs, when examined in detail they continued to have an “as if” quality which was completely absent in those patients with full ND.

A male patient believed he had contracted AIDS some years previously from a cheroot which he picked up from a pavement and later smoked. Repeated negative tests for the AIDS virus only reaffirmed his delusional belief that the doctors did not want to tell him he had "such an awful disease".

The patient who believed he had leukaemia had in the past complained that he had cancer, a soft brain and a brain tumour.

One man had believed for some years that he had a tumour in his upper palate. At the age of 15 he was found to have an aneurysm of the left vertebral artery which was repaired surgically but this operation was now linked to the causation of the tumour.

## **(6) COMPARISON OF THE TWO GROUPS**

### **(a) Early History & Development**

Two patients from the ND group experienced separation from mother in the first year of life. In one case, mother was in a psychiatric hospital for the first 9 months. The second patient was herself admitted to hospital for two weeks with a chest infection. Four HD and two ND subjects reported childhood neurotic traits, only one was referred for specialist psychiatric help. Three HD and one ND patient recalled persistent enuresis. One HD patient suffered from a marked speech impediment in early childhood while a ND patient recalled sleep disturbance due to fear of the dark throughout childhood.

## **(b) Hospitalisation For Physical Illness**

### **(i) Childhood**

Half the HD group (8/16) and one third of the ND group (5/15) were admitted to hospital for physical illness during childhood (ie. 1 - 13 yrs) (Table VII). [One patient (ND 12) was hospitalised on psychiatric grounds because of “persistent ideas of death”, aged 12 years.]

**TABLE VII**  
**CHILDHOOD HOSPITALISATIONS**

	<b>HD</b>	<b>ND</b>
Tonsillectomy	5	3
Scarlet Fever	1	1
# Leg	0	1
GI Investigation	1	0
Bone Disease	1	0

### **(ii) Adult**

In reporting the past medical history, hospital admissions (for treatment and/or investigation) rather than periods of illness are used as they are likely to be more reliable. Admissions were classed as medical or surgical, each admission being treated as one episode irrespective of its length. HD patients had a total of 23 medical and 36 surgical admissions; the equivalent numbers for the ND group were 15 and 8 respectively (Tables VIII).

Using a two-tail t test the HD group had a significantly greater number of surgical admissions ( $p = 0.0218$ ).

**TABLE VIII**  
**MEDICAL & SURGICAL ADMISSIONS FOR BOTH GROUPS**

	HD		ND	
	n = 16		n = 15	
	<i>Medical</i>	<i>Surgical</i>	<i>Medical</i>	<i>Surgical</i>
Total	23	36	15	8
Mean	1.4	2.25*	1	0.53*
Median	1	1.5	1	0
Standard Deviation	1.6	2.6	1.25	0.63
Minimum	0	0	0	0
Maximum	5	7	4	2

\*  $p = 0.02$

**(c) Drug / Alcohol Use**

One patient in the ND group (ND 12) admitted a past history of Cannabis abuse but a urine drug screen on admission indicated he was not currently using the drug. This patient also had a high alcohol intake (> 30 units per week). In the majority of patients in both groups, however, the alcohol intake reported was less than 10 units per week.

#### **(d) Forsensic History**

One patient (ND 12) had spent a short period in prison following a conviction for smashing a shop window. Apart from this subject, there were no other reported anti-social activities by any other cohort members.

#### **(e) Family Psychiatric History**

Six HD and four ND patients had at least one parent with a positive psychiatric history (Table IX). Both parents of one ND patient were hospitalised on several occasions for major psychiatric illness; the father being treated for paranoid schizophrenia and the mother suffering from recurrent depression which began post-partum and continued throughout the patient's life. Psychiatric illness in first and second degree relatives was also documented. In total, 7 of the HD group and 10 of the ND group, had either a parent, sibling or second degree relative with a psychiatric illness which required physical treatment.

**TABLE IX**  
**FAMILY PSYCHIATRIC HISTORY**

	<b>HD</b>	<b>ND</b>
<b>Psychiatric History</b>	<b>n = 16</b>	<b>n = 15</b>
Parents	6	4
First Degree Relative	3	4
Second Degree Relative	2	4

**(f) Personal Psychiatric History:**

**(i) Age of Onset**

Table X shows the mean, median and range for the age of onset of psychiatric illness in the two groups. The onset occurred earlier in the nihilistic group - mean age 45 years - than in those expressing hypochondriacal delusions - mean age 57 years; this difference was not significant ( $p = 0.07$ ).

**TABLE X**  
**AGE OF ONSET OF PSYCHIATRIC ILLNESS (YEARS)**

	<b>HD</b>	<b>ND</b>
	<b>n = 16</b>	<b>n = 15</b>
Mean	56.56	45
Median	59	49
Mode	59	52
Standard Deviation	19.42	12.94
Minimum	29	21
Maximum	81	75

**(ii) Length of Illness**

The mean length of illness for the HD and ND group was 11.8 and 9.6 years respectively; when the top value in each set was removed the means were 10 and 6.6 years. Using a t-Test no significant difference could be shown between the means of the two groups. Table XI compares the length of illness for HD and ND patients.

**TABLE XI**  
**LENGTH OF PSYCHIATRIC ILLNESS**

	<b>HD</b>	<b>ND</b>
	n = 16	n = 15
Mean	11.75	9.6
Median	6.75	2.9
Mode	0.75	N/A
Standard Deviation	12.98	11.37
Minimum	0.5	0.25
Maximum	37	35

The two groups were similar on a number of features of their psychiatric illness:

(iii) number of in-patient and day hospital admissions (Table XII)

(iv) longest admission (Table XIII)

(v) longest period of remission (Table XIV)

(vi) duration of delusions (**Figure VI**)

(vii) interval from the onset of psychiatric illness to the development of overt delusions (**Figure VII**).

**TABLE XII**  
**PSYCHIATRIC ADMISSIONS**

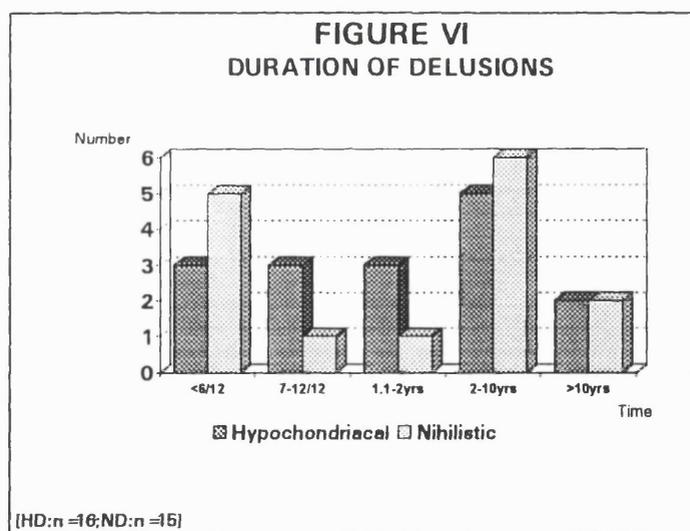
	HD		ND	
	n = 16		n = 15	
	<i>In-Patient</i>	<i>Day-Hospital</i>	<i>In-Patient</i>	<i>Day-Hospital</i>
Mean	3.8	1.25	3	0.46
Median	2	1	2	0
Mode	2	1	2	0
Standard Deviation	3.6	1.18	2.3	1.06
Minimum	1	0	1	0
Maximum	12	4	7	4

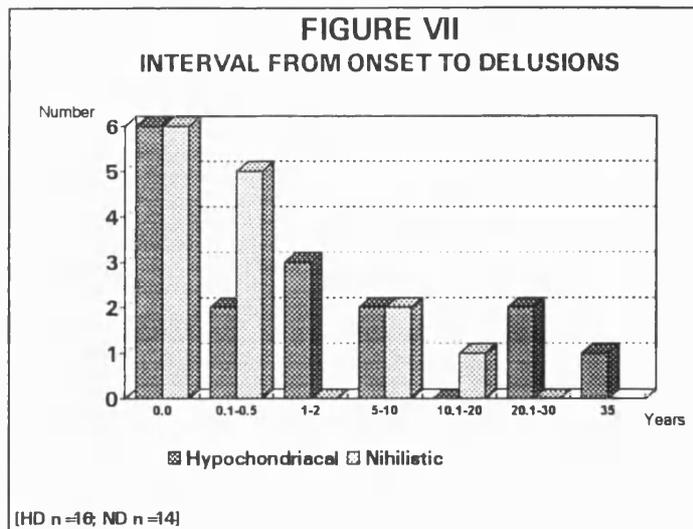
**TABLE XIII**  
**LONGEST ADMISSION FOR HD AND ND PATIENTS**

<b>Time (months)</b>	HD	ND
	n = 16	n = 15
< 6	14	10
7 - 12	1	1
13 - 24	1	0
> 25	0	4

**TABLE XIV**  
**LONGEST REMISSION FOR HD AND ND PATIENTS**

	HD	ND
<b>Time (months)</b>	n = 16	n = 15
< 6	3	3
7 - 12	1	1
13 - 24	1	0
> 25	2	2
Nil	9	8





## (7) TREATMENT AND OUTCOME

### (a) Treatment received in the past

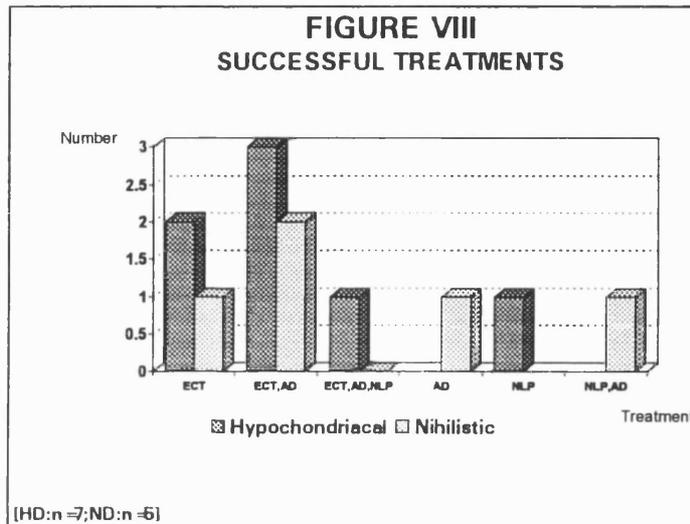
The majority of patients in both groups had received Electro-convulsive therapy (ECT), anti-depressants (AD), and neuroleptic medication (NLP), either alone or in combination, during previous admissions (Table XV).

**TABLE XV**  
**TREATMENTS RECEIVED IN THE PAST**

	HD	ND
	n = 16	n = 15
ECT	10	8
Anti-Depressants	16	13
Neuroleptic Meds	12	12
Single Treatment	2	3

**(b) Did delusions ever resolve ?**

In seven of the HD group (n=16) and 5 of the ND patients (n=15), the delusions had abated in the past with treatment (**Figure VIII**). ECT, either alone or in combination with AD or NLP appeared to have most benefit.

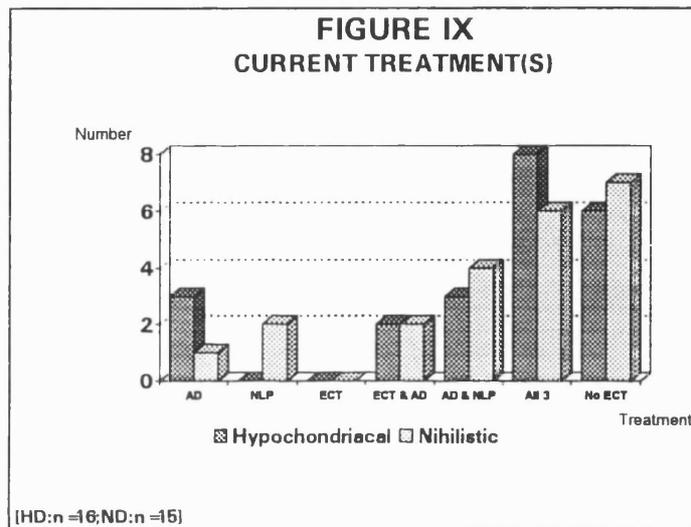


**(c) Did patient overtly act on the delusions ?**

Fourteen of the HD (88%) and 9 of the ND (60%) patients acted on their delusions. In the ND group this ranged from injuring oneself in an attempt to establish body existence, to causing a disturbance at a funeral by insisting that she, the patient was lying dead inside the hearse. The HD patients presented themselves in a variety of medical settings, insisting they needed urgent examination and treatment.

#### (d) Current Treatment

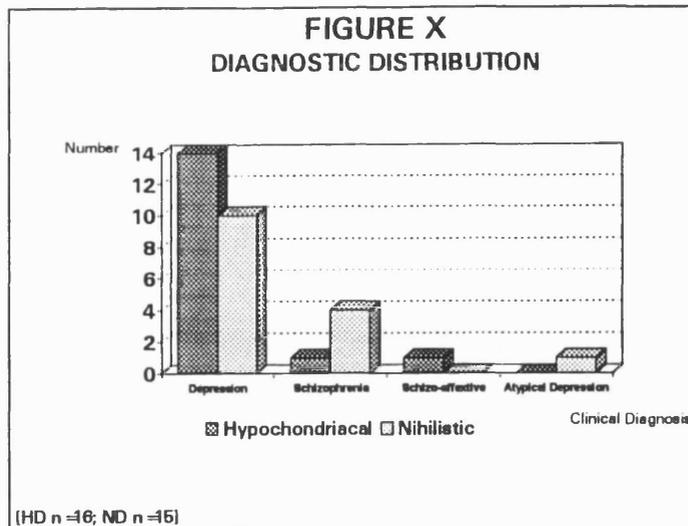
Figure IX shows the treatments each patient was receiving when examined for the study. Electroconvulsive therapy (ECT), antidepressants and neuroleptic medication were used similarly in both groups.



### (8) DIAGNOSES

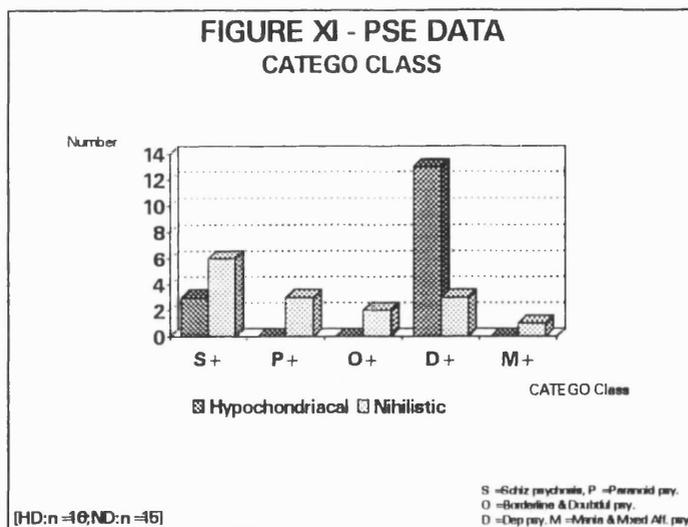
#### (a) Current Clinical Diagnostic Categories:

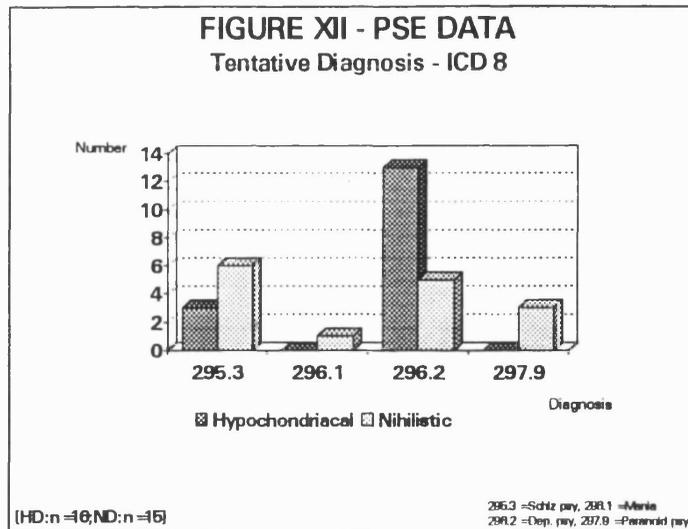
This was based on the current diagnosis ascribed by the Consultant in charge of the patient's care at the time of interview. In both groups, depression was the commonest condition (Figure X).



**(b) PSE diagnosis**

For 25 of the 31 patients studied the ID was 8; 4 subjects had a rating of 7 while the PSE data on the remaining 2 patients were at level 6. The resulting Catego Class and "Tentative diagnosis" for each patient are shown in **Figure XI** and **XII**.





Clinical and PSE diagnostic categories are summarised in Table XVI.

**TABLE XVI**  
**DIAGNOSES - COMPARISON OF CLINICAL AND PSE DATA**

	Catego		Tentative Diagnosis		Clinical Diagnosis	
	ND	HD	ND	HD	ND	HD
Schizophrenia	6	3	6	3	4	1
Depression	3	13	5	13	10	14
Paranoid Psychosis	3	0	3			
Schizo-affective						1
Mania/Mixed Affective	1		1			
Borderline & Doubtful	2					
Atypical Depression					1	

## **(9) SUMMARY OF CLINICAL FINDINGS**

Clinical examination of 15 subjects with nihilistic delusions (ND) and 16 expressing hypochondriacal delusions (HD), showed the following clinical features:

The ND patients were predominantly female, with a mean age of 55 years; the delusions were strongly held with the majority denying their existence and two thirds expressing ideas of immortality. Depression was the most common clinical diagnosis. In their background history one third had a history of childhood hospitalisation and over half had a positive family psychiatric history. Four patients had suffered a head injury which required hospitalisation and two subjects had a history of grand mal fits.

By comparison the 16 patients with HD were predominantly male with a mean age of 68 years. Half the group believed they had cancer of the gastro-intestinal tract and the majority were clinically depressed. In their background history three patients gave a history of birth difficulties and half of them were admitted to hospital in childhood. Compared to ND patients, the HD group had significantly more surgical admissions in adulthood while a similar number had a positive family psychiatric history. Three patients had suffered a head injury which required hospitalisation.

Demographic data including, the number of years spent in formal education, ethnicity, religion, social class and marital status, were similar for the two groups. Equally there was no detectable difference between HD and ND patients when a number of features of their psychiatric illness were examined; these included the number of psychiatric admissions, the length of admission, the longest remission,

the duration of delusions, the interval from the onset of illness to expression of delusions, past treatments and response to ECT.

## **(10) ORGANICITY**

### **(a) Cognitive Examination: MEAMS**

4 HD patients refused to proceed at the fourth sub-test and were therefore excluded from the analysis; none of these showed clinical evidence of cognitive impairment. 12 HD patients completed the MEAMS (Table XVII); 9 scored in the normal range, 3 were borderline. Table XVIII shows the sub-tests on which these three patients failed; all three failed the unusual views test which is sensitive to right hemisphere lesions (Warrington and Taylor 1974). Two patients failed the test of spatial construction, an indicator of organic brain damage (Warrington & Gautier-Smith, 1974).

**TABLE XVII**  
**MEAMS SCORES (Normal Range 10-12)**

Total Score	HD n=12	ND n=12
12	6	6
11	3	1
10	0	2
9	3	1
8	0	1
4	0	1

**TABLE XVIII**  
**MEAMS SUB-TESTS WHICH "BORDERLINE" HD AND ND PATIENTS**  
**FAILED**

Sub Test	HD n=3	ND n=2
Comprehension	1	1
Spatial Construction	2	2
Unusual Views	3	1
Usual Views	1	0
Fragmented letters	1	0
Remembering Pictures	1	0
Orientation	0	1
Motor Perseveration	0	2

Twelve ND patients completed the MEAMS, three refused - one because she "did not have a brain". Nine scored in the normal range, two were borderline and one patient, who was mentally sub-normal, scored 4/12. Table XVIII shows the sub tests on which the two borderline ND patients failed. One patient showed clinical signs of a Gerstmann's syndrome and though she was un-cooperative with further neuro-psychological testing, clinical evidence suggested the possible onset of Alzheimers disease.

## **(b) Physical examination**

While all systems were examined, particular attention was paid to the central nervous system examination to detect evidence of organic brain dysfunction. One patient with HD had a mild intention tremor. Four with ND had one or more abnormality noted. One patient had residual signs of a left hemiparesis, another had drug-induced oro-facial dyskinesia. Two patients had a mild peripheral neuropathy -diabetes was the cause in one, folate deficiency in the other.

## **(c) Physical Investigations**

### **(i) Laboratory Investigations**

Blood tests for Erythrocyte Sedimentation Rate, Full Blood Count, Urea & Electrolytes, Liver Function Tests, Thyroid Function Tests, and Syphilis Serology were performed. Two patients (HD 2 & ND 6) were mildly anaemic (Hb = 10.9g/dl); iron and folate deficiency were the respective causes. There were no other significant abnormalities in any of the tests.

### **(ii) Computerised Tomography (CT) of the brain**

Ten of the HD patients (5 females and 5 males, mean age 67.9 years) and eight of the ND group (6 females and 2 males, mean age 53.5 years) agreed to have a CT brain scan. All 18 patients showed calcification of the choroid plexus. Six of the eight ND patients showed evidence of abnormality in at least one of the eight anatomical areas surveyed (Table XIX). The patient with the highest atrophy score (F,62yrs) was mentally handicapped and epileptic. Of the remaining 5 patients, 4 showed enlargement of the left sylvian fissure; 3 had enlargement of the right sylvian fissure, third ventricle and lateral ventricle (the enlargement was mild in

all but one case who showed moderate enlargement of the lateral ventricle); mild atrophy of the parietal lobe was seen in 2 cases and of the frontal lobe, in one patient. Using the same criteria to detect abnormalities, the scans of all 10 HD patients showed atrophy/enlargement in one or more area. One patient was found to have a small (2cm) meningioma in the right parietal convexity.

**TABLE XIX**  
**CT SCAN RESULTS IN 8 ND AND 10 HD PATIENTS**

		Abnormal Enlargement Present (+)					Atrophy Present (+)		
ND Patients		IHF	RSF	LSF	3rd Vent	Lat Vent	T	P	F
Sex	Age								
M	42			+					
F	44			+				+	+
F	45								
F	52								
F	52		+	+	+				
F	53		+	+	+	+			
F	62	++	++	++	++	+++	+	+	+
M	78		+		+	++		+	
<hr/>									
HD Patients									
Sex	Age								
F	42	+				+			
M	51			+		+			+
F	60	+				+			+
M	66	++	+	++	++	++	+	++	+
M	66		+	++	++	++	+	++	+
F	66								
F	79	+	++	++	+	+	+	+	+++
M	82		+	+	++	++			+
F	82	+	+	+	+	++	+		+
F	85	++	++	++	+	+		+	+

IHF = Inter-Hemispheric Fissure  
RSF = Right Sylvian Fissure  
LSF = Left Sylvian Fissure

T=Temporal P=Parietal F=Frontal  
+=Mild ++=Moderate +++=Severe

Total atrophy scores were calculated for each patient. Using these figures, the mean total atrophy scores for each group were : ND: 3.75 (range 0 - 14); HD: 7 (range 0 -13). Given the age difference between the two CT scan groups, the

results were ranked as in Table XX, to test whether age was a determining factor. For the HD group in particular there is no strong evidence of a direct relationship between the atrophy score and chronological age.

**TABLE XX**  
**RANKED ATROPHY SCORES**

<b>ND</b>		<b>HD</b>	
<i>Age (Yrs)</i>	Total Atrophy Score	<i>Age (Yrs)</i>	Total Atrophy Score
42	1	42	1
44	3	51	4
45	0	60	3
52	0	66	12
52	3	66	13
53	4	66	0
62	14	79	12
78	5	82	7
		82	8
		85	10

The mean atrophy scores for each area surveyed (i.e. Inter-hemispheric fissure, 3rd ventricle, lateral ventricle, Sylvian fissures - right and left, frontal, temporal and parietal cortex) for the two groups of patients are shown in Figure XIII. Only the HD patients had a mean score greater than 1 (mild atrophy) for any of the areas examined - lateral ventricle, left sylvian fissure and frontal lobe.

**FIGURE XIII - CT BRAIN SCANS  
MEAN ATROPHY/ENLARGEMENT SCORE**

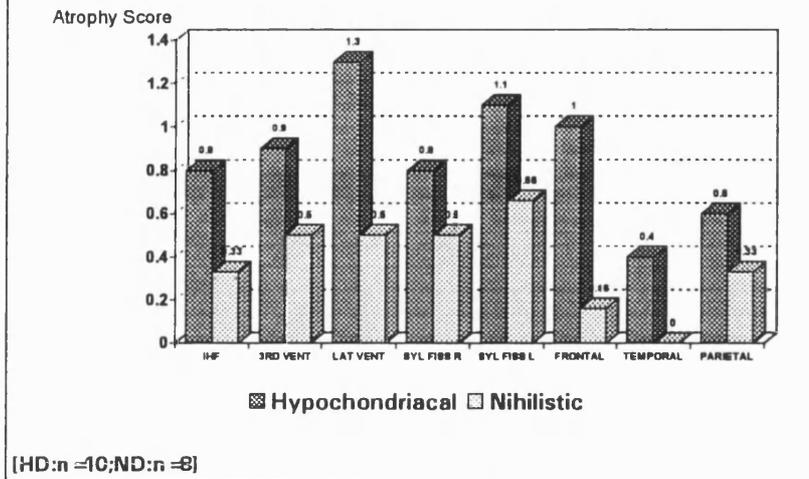


Table XXI compares the CT scan findings with the results of psychometric screening using the MEAMS. Though 2 HD patients had a similar pattern of errors on psychometric testing, analysis of their CT scans showed very different results. One patient (female, aged 42 years), showed abnormality in only one area (lateral ventricle) while for the other (male, aged 79 years) abnormalities were reported in all 8 areas examined.

**TABLE XXI**  
**ATROPHY SCORES COMPARED WITH**  
**MEAMS RESULTS FOR BOTH GROUPS OF PATIENTS**

<b>PT #</b>	<b>Age</b>	<b>Atrophy Score</b>	<b>MEAMS Score</b>	<b>Sub-Tests Failed</b>
HD10	51	4	Refused	
HD12	66	0	Refused	
HD11	42	1	9/12	Usual & Unusual views; Spatial construction
HD3	60	3	12/12	
HD1	66	12	Refused	
HD13	66	13	12/12	
HD15	79	11	9/12	Usual & unusual views; Spatial construction
HD16	82	7	12/12	
HD14	85	10	12/12	
HD8	82	8	11/12	Unusual views
ND12	42	1	12/12	
ND2	44	3	12/12	
ND10	45	0	12/12	
ND4	52	0	10/12	Remembering pictures & verbal fluency
ND3	52	3	Refused	
ND1	53	4	12/12	
ND9	62	14	4/12	Mentally Handicapped
ND7	78	5	12/12	

## **Chapter 5. DISCUSSION**

A century after Cotard's syndrome was described patients admitted over a one year period to five psychiatric units (serving a catchment population of 1.12 million people) expressing hypochondriacal or nihilistic delusions were examined. Forty three patients were referred for assessment of which sixteen with hypochondriacal delusions (HD) and fifteen with nihilistic delusions (ND) were included in the study. Amongst acute admissions the incidence rate for HD was 4.3 per 1000 admissions (range 4.3 - 5.6) and for ND the rate was 3.4 (range 3.4 - 7.7).

### **(1) A COMPARISON BETWEEN PATIENTS WITH ND AND HD**

#### **(a) Demographic Features**

Phase I of the study focused on the socio-demographic and clinical features of patients with HD and ND. The majority of patients in both groups were British and came from Social classes III, IV and V. They had left school in their early teenage years and though a greater number of ND patients remained single throughout their life, the majority in both groups had married. There were significant differences in the sex distribution and in the mean age of the two groups, with the HD patient more likely to be male and over 60 years of age while the ND patient was typically female and middle-aged. These two findings appear to contest the view that ND is simply an extreme or exaggerated form of HD. A striking feature was the high prevalence of psychiatric disorder in the families of the two groups; over half the patients had a parent or sibling with a diagnosed psychiatric illness.

## **(b) Diagnoses**

Using the diagnosis given by the patient's Consultant Psychiatrist, the majority of patients in both groups were clinically depressed. When data from the PSE interview was analysed only minor differences emerged between the CATEGO classification, the Tentative Diagnosis and the Clinical Diagnosis for the HD patients. For the ND group however there was greater disparity with 5 patients classified as depressed by the psychiatrist, re-classified as having schizophrenia in 2 cases and paranoid psychosis in 3 cases, by the PSE Tentative diagnosis. This over diagnosis of depression may reflect a bias from the education of the psychiatrists as textbooks have traditionally highlighted melancholia as the breeding ground for ND. Alternatively, other psychotic symptoms revealed by the PSE interview may have been relatively neglected in the assessment, in the presence of overwhelming and bizarre delusions.

## **(c) Psychiatric History**

The age of onset, length of illness, time interval to appearance of delusions, duration of delusions, number of psychiatric admissions and treatments received were comparable in both groups. For both groups the illness began most commonly in middle-age (50 - 60years), with no previous contact with psychiatric services. Longitudinal data in the study were enlarged by the inclusion of patients who were admitted to hospital prior to the commencement of the study. These patients presented a more chronic picture with illnesses which had begun 10 - 40 years earlier. For the majority of patients in both groups however, the length of illness was less than 10 years. Some ND and HD patients had expressed their delusional beliefs at the point of onset of illness while for others there had been a delay. In the case of one HD patient a delay of 35 years was recorded. The most common number of admissions for both sets of patients was 2, and for the majority

it lasted less than 6 months. Four ND patients had admissions lasting greater than 2 years. Anti-depressants, neuroleptic medication and ECT, given singly and in combination, were used similarly in each group. ECT appeared an integral part of a treatment regime that obtained remission, a finding in keeping with studies on delusional depression in late life (Baldwin,1988). Other symptoms usually improved on treatments offered but the delusional beliefs never remitted in over half the ND and HD patients. Only in two cases was there evidence of movement from HD to ND; the histories of the other 29 patients showing remarkable consistency in delusional belief.

In summary, apart from age and sex differences, HD and ND patients show many similarities in their personal, family and psychiatric histories; clinically the majority suffer from depression and respond to similar treatment regimes though ECT appears a pre-requisite for recovery.

## **(2) THE ORGANIC BASIS OF ND**

In a second study, data from investigations into organic changes from the two sets of patients were compared. In their early history, three HD patients reported birth difficulties; one third of the ND group and half the HD group were admitted to hospital in childhood. Four ND and 3 HD patients had a history of head injury which required hospital attendance and 2 ND patients had a history of grand mal fits. While the two groups had a similar number of medical admissions, the HD group had a significantly greater number of surgical admissions during adulthood. Two possibilities could account for this finding; (a) that the HD patients may indeed have suffered more underlying pathology than ND patients or (b) because of their propensity to somatise psychological distress, HD patients are more likely to be admitted to surgical rather than psychiatric wards. As no other control data is available it is not possible to suggest which is correct.

On cognitive testing 3 out of 12 patients in each group showed evidence of impairment. Physical examination and laboratory investigations revealed no significant pathology. Ten HD and eight ND patients agreed to a brain CT scan: one HD patient was found to have a deep seated meningioma in the right parietal area and HD patients showed a greater number of abnormalities; atrophy of the frontal lobe and enlargement of the lateral and 3rd ventricles were particularly prominent. By contrast, the CT Scans of the ND patients showed only minor abnormalities, refuting the suggestion of an organic aetiology for ND.

### **(3) METHODOLOGICAL LIMITATIONS**

These findings need to be seen in the light of methodological limitations arising from:

#### **(a) Missed cases:**

A total of 43 patients were referred by fellow psychiatrists; of these 31 were included in the study. Six patients were excluded as their experiences were not delusions. Case note examination and discussion with ward staff suggested that the remaining 6 patients probably were deluded, but they had either absconded from the ward (2 cases) or were too ill to be interviewed. Five of these had probably suffered ND (qv. page 21); they were similar in age and sex distribution to those included in the study i.e. predominantly female and middle-aged. Successive attempts to complete the assessment of one hypochondriacal patient (male, aged 74 years) failed because of overriding pre-occupation with delusions of ill health. The failure to assess and include these 6 probable cases represents a loss of 14% of the total sample. Despite this loss, the evidence available suggests that, on the two factors on which the two groups differed significantly - age and

sex distribution, the difference between the groups would have been enhanced by their inclusion.

Though the study protocol stated that patients should have been admitted either to an in-patient or day hospital unit, three patients with nihilistic beliefs and one with marked hypochondriacal pre-occupations, who had been assessed at home by psychiatrists were referred for assessment. Unfortunately none agreed to a further assessment and these patients were not admitted to hospital during the study period. It seems that not all patients with these beliefs are admitted to hospital; the associated behaviour - such as public expression of the delusions - rather than the delusions, is more likely to result in hospitalisation.

#### **(b) Type II error**

The final numbers in the two groups were less than planned. A pilot survey carried out over one week, of the in-patients in the catchment area hospitals indicated that there were 10 patients who satisfied criteria for nihilistic delusions. Based on this information the study protocol aimed for 30 subjects in each group. However using strict criteria, the new admission rate for both types of delusion was small and the yield in one year therefore was less than expected. The small number of patients with such a rare condition may lead to a type II error in which differences between groups may not be detected in a statistical analysis.

#### **(c) Control Group**

When the study was originally planned, it was envisaged that for each ND and HD included, a control patient -the next patient of the same sex admitted to the unit with the same diagnosis but no delusions, and belonging to a similar age group - would be assessed. The difficulty in obtaining, assessing and carrying out

investigations in these patients rendered this impossible. The lack of a non deluded control group makes it difficult to interpret some of the results such as the high incidence of family psychiatric disorder and childhood hospitalisation in both groups, and the incidence of head injury in the ND group.

#### **(d) Observer bias**

From the point of referral the interviewer was aware of the nature of the patients illness. Using standardised instruments such as the PSE and the MEAMS, some degree of observer bias was eliminated and, the CT scans were rated blind to group membership. However, the results were counter intuitive i.e. that ND would have a more organic basis than HD.

#### **(e) Cross-sectional assessment**

The study protocol did not include follow-up interviews. The study data are based on a single interview with the patient but supplemented with further interviews with psychiatric staff and informants. This method has two disadvantages. First, the mental state of some patients at the time of examination might have lead to exclusion, because of temporary amelioration. Second, later interviews might have suggested greater movement between the two groups ie HD becoming ND or vice versa or the existence of further sub-groups. Further follow up is needed to understand better the prognosis in both groups.

### **(4) A COMPARISON WITH COTARD'S OWN PATIENTS**

The study was conceived after the author attempted to treat a patient with intractable nihilistic delusions; an elderly man who echoed many of the characteristic symptoms described by Cotard in his original description. He was

persistently negativistic, complaining that he could not swallow, could not eat, could not sleep and could not open his bowels. At his worst he stated that he had never been born and that he was dead. Given the advances in physical treatments for mental illness (particularly for depression) was it possible, a century after Cotard's syndrome had been described, to find the same type of patient in modern psychiatric hospitals? If they existed how did they compare with the original?

### **(a) Psychopathology**

In the first paper (1880) Cotard gave a clinical description of a "particular type of hypochondriacal delusion" and outlined 6 characteristics by which patients with these delusions might be recognised: (1) anxious melancholy; (2) ideas of damnation or possession; (3) a propensity towards suicide and self-mutilation; (4) analgesia; (5) hypochondriacal ideas of non-existence or destruction of different organs, of the whole body, of the soul, of God etc.; (6) ideas of never being able to die. The 15 nihilistic patients in the study were chosen purely on the basis that they expressed nihilistic delusions which were defined as "fixed delusional beliefs in which the patient denied all or part of self or of the outside world". Given the above characteristics, how many of these 15 patients fitted Cotard's original description?. Clinically 11 of the 15 patients were depressed (anxious melancholy); 6 patients believed they were damned or possessed; 3 subjects had a history of self-harm (this relatively small number may be in keeping with Cotard's finding that those who believe themselves damned are more likely to attempt suicide); no patient showed objective evidence of analgesia though it might be hypothesised that the two patients who smashed glass in an attempt to establish body existence, subjectively, had reduced sensation; all patients denied the existence of part or all of their body and two-thirds believed they would never die. Apart from analgesia, therefore, other Cotard characteristics were common among the group; for the

core psychopathology in particular, these patients appear very similar to those described by Cotard.

### **(b) Diagnoses**

Two years after his original description Cotard (1882) expanded his ideas and reported 11 cases with ND. He divided his patients into three categories: Category I contained 8 cases with ND in their simplest form eg.

*“Ms S aged 53 years was in an extreme state of agitation. She maintained that no one married or was born and she had stopped praying because God did not exist”.*

Category II contained a single case of a man (no age given) who developed ND one year before physical signs of general paralysis were apparent:

*“he refused to go to bed because there was no more night; he spent whole nights at his office telling his wife it was daytime and there was no night; one year later he showed signs of dementia”.*

Cotard placed 2 cases in a third category; here ND were associated with ideas of persecution:

*“she imagined she was being persecuted by people who could read her thoughts .....as well as accusing others of harming her she accused herself of being a monster”*

In each case depressed mood was was the initial presentation.

From this categorisation of his patients it seems reasonable to conclude that Cotard recognised at least three settings in which ND might be seen: (1) in a

simple form linked to depression; (2) in the prodrome of, or, as a result of organic illness; and (3) in a patient where ideas of persecution figure prominently. No patient in the study was diagnosed as having an organic illness. Moreover, syphilis serology for all patients was negative. The link with organic illness is discussed further below. Earlier in the paper Cotard, while highlighting depressed mood as the breeding ground for these delusions, remarked that “complicated cases in which ND and persecutory delusions co-exist, were not un-common”. Those patients in his third category might to-day be diagnosed as suffering from schizophrenia. Four study patients were diagnosed clinically as schizophrenic. Their ND were no less forceful than those expressed by depressed patients but other psychotic phenomena, including second person auditory hallucinations and passivity phenomena, often dominated the clinical picture.

### **(c) Demographic Features, Course & Prognosis**

While subsequent authors have commented on a female preponderance, at no point in his writing does Cotard make a clear statement on the sex distribution of this illness. However, analysing his eleven cases one finds a female to male ratio of 8:3 or, expressed as a percentage 73% female and 27% male. The female to male ratio in this study group was 80% to 20% (12:3).

Cotard believed that the illness typically came on suddenly in middle aged people who had no previous history of mental illness and, the prognosis was poor. The median age of onset for the ND patients in the study was 49 years and the majority had no past history of psychiatric illness. Only one third of the group had shown a good response to treatment and many patients showed a chronic picture with long periods of hospitalisation. As predicted by Cotard, in some patients the mood disturbance improved but the patient remained handicapped by intense ND which made discharge home impossible.

#### **(d) Comparison With Later Studies**

With a few notable exceptions, the format of most of the subsequent work on Cotard's syndrome has been to expound a theory based largely on one or two cases histories. On this basis organic and psychodynamic aetiologies have been hypothesised and, the core issue of whether Cotard described a symptom or syndrome, has been discussed. However, two series of patients have been described which reveal useful comparative data. Saavedra (1968) reported 10 cases (8 females and 2 males, aged 29 - 81 years); 4 were depressed, 3 showed a schizo-affective picture and 3 had schizophrenia. Based on clinical observation he made a distinction between a "genuine" Cotard syndrome occurring in depressed patients and a "pseudo" syndrome in "coenaesthetic schizophrenia". While the age and sex distribution is similar to the present study there are fewer cases of depression and perhaps for this reason there is little agreement on the existence of a pseudo Cotard syndrome.

Joseph and O'Leary (1986) reported 8 cases with Cotard's syndrome with an age range of 26 - 64 years; 6 had an affective disorder and 2 were suffering from paranoid schizophrenia. As in the previous and current studies, the patients were predominantly female (7:1). The patients expressed a variety of nihilistic delusions as well as delusions of immortality; similar to the current study, analgesia was not "an obvious" feature.

#### **(5) SYMPTOM OR SYNDROME**

When Cotard described nihilistic delusions in 1882 he highlighted their central place in an illness "distinct in its characteristics and development". In his view, ND together with other closely associated symptoms - including auditory and

visual hallucinations, systematic negativism, attempts at self-mutilation, its sudden onset and poor prognosis - represented a discernible clinical syndrome. Those authors who have argued most strongly against it being accepted as a syndromal entity have used case reports chiefly to support their views. In the two series of patients discussed above there is at least limited support for the existence of syndromal cases.

The patients in the present study are similar to those described by Cotard in terms of age, sex, nihilistic and associated beliefs, psychiatric history, and chronicity. This similarity may be due in part to the distinction which was made in the entry criteria between HD and ND; in other words given a spectrum of illness where patients first develop hypochondriacal beliefs, the nihilistic group in this study may reflect the more advanced or severe cases.

Nihilistic delusions have been described as a feature in patients with functional and organic illnesses including depression, mania, schizophrenia, hysteria, anorexia nervosa, as well as encephalitis, senile dementia and lesions of the parietal lobe. The prominence given to depression by Cotard in his description of the syndrome has therefore been questioned. So too have other features including the age of the patients, the chronicity of the illness and its poor prognosis. From the present study there appears good evidence to suggest that using strict criteria a group of patients expressing ND show other Cotard features which are unique to this condition.

## **(6) ORGANIC AETIOLOGY**

A major part of the study was to examine whether possession of classic Cotard symptoms could be regarded as a marker of covert organic disease. Consequently,

evidence of brain injury/damage was sought in the history, examination and investigations.

#### **(a) Perinatal history**

A number of studies have shown that psychiatric patients experience more pregnancy and birth complications than non-psychiatric controls (Mura,1974). It has been suggested that early minimal brain damage caused by these complications, may at a later stage lead to psychiatric disorder. In the ND group of patients there is no evidence to suggest that early brain damage may have been a factor in the development of their psychiatric illness - 13 patients had an uncomplicated birth while 2 patients were unable to give an accurate history.

#### **(b) Head Injury**

Before developing a psychiatric illness, four ND patients suffered a head injury which required hospitalisation, though none reported further neurological assessment. How should we interpret this finding ? The relationship between head injury and major psychiatric illness (mostly schizophrenia) has been extensively studied. Ach te et al (1969) examined three and a half thousand Finnish head injured soldiers over a 26 year period and found that while the number of cases of "primary" schizophrenia was at the expected level (<1%), the number of schizophreniform or borderline cases was well above the incidence in the general population (1.8%). This re-enforced earlier findings (Feucht-wanger & Mayer-Gross,1938) and was similar to the conclusion reached by Davison & Bagley (1969) in their major review of the subject. Using a different approach Johnstone et al (1987) examined 268 cases of first-episode schizophrenia and found 15 cases in which organic disease was strongly implicated in the aetiology; only in one of these 15 patients however, was there a history of head injury. In a further study of

head injured soldiers brain damage was estimated to account for just one-fifteenth of the total causation of psychiatric disability (Lishman,1973). None of the four head injured ND patients in the present study, reported post-traumatic amnesia (PTA); several studies have shown close correlations between the degree of PTA and the severity of later psychiatric disability (Lishman,1968). Similarly a relationship has been demonstrated between the latter and the depth of penetrating brain injuries. The injuries reported by all four ND cases were closed. Given the strength of other factors such as the strong family history of psychiatric disorder and the apparent lack of severity of the head injuries reported by the index cases, the evidence to support head injury as an aetiological factor in this group of ND patients appears weak.

#### **(c) Physical Examination/Laboratory Investigations**

Only one ND patient had physical signs of central nervous system damage i.e. residual signs of a left hemiparesis. Despite the age range of the group the patients showed surprisingly little evidence of physical illness. Laboratory investigations were equally un-helpful in demonstrating any contributory pathology; in particular all patients had negative syphilis serology (in contrast to some of the early cases reported by Baillarger and Cotard).

#### **(d) Psychometric testing**

Of the 12 patients who completed the cognitive test (MEAMS) 10 were cognitively intact while 2 scored in the borderline range. Both patients failed the spatial construction and motor perseveration sub-tests; the former is a test of parietal lobe function while the latter tests the executive capacity of the frontal lobes (Luria,1973). In these 2 patients therefore there is a suggestion of diminished cognitive performance secondary to organic brain damage. Unfortunately as

neither patient agreed to further psychometric testing or to a CT brain scan, the “organic” evidence remains inconclusive.

#### **(e) CT Brain Scans**

Almost half the ND patients refused to have a brain scan; for most this reflected their general negativistic state or, for some, their delusion that they did not possess a brain. Six of the eight patients were rated as showing evidence of minimal atrophy/enlargement in one or more of eight anatomical areas. However, when the patient with mental subnormality and long standing epilepsy was removed from the analysis, there remained little evidence of major cerebral abnormalities in these patients. In particular no strong evidence was found to support the commonly held view that damage to the parietal lobes plays a significant role in the aetiology of this condition. Though the numbers were small there was a suggestion that the degree of abnormality was age related. Compared to the HD group the ND patients showed markedly fewer abnormalities. This may in part be related to the relative youthfulness of the ND group though the total atrophy score was not directly related to age in the HD group. The comparison is however, further weakened by the difference in sex distribution in the two sets of patients.

These results are at variance with those in a recent study (Joseph & O’Leary, 1986) which examined the CT brain scans of 8 consecutive patients admitted to a tertiary referral centre with Cotard’s syndrome. The patients were mostly female and depressed; their mean age was 41 years (range 30-64). Compared to age, sex, and major diagnosis matched controls, the index cases showed more abnormalities on CT scans (31 compared to 24). The authors concluded that diffuse brain atrophy and abnormalities of the medial frontal lobes may play a part in the genesis of Cotard’s syndrome. The 8 ND patients whose CT brain scans

were examined in the present study were older (mean age 53.5 years. range 42-78) but of same sex and diagnostic distribution. The method in the two studies was similar i.e. blind ratings by one expert, yet the number of abnormalities detected is widely different. Whilst comparison with controls was not possible in the present study, comparison with the HD data may at least be useful in that it compares data on two groups of patients with similarly intractable delusions.

Case reports suggesting a link between Cotard's syndrome and local, as well as diffuse brain dysfunction, may have over estimated the importance of organic factors and biased researchers in to following one line of enquiry. A recent study of 65 patients with unequivocal evidence of brain pathology and a variety of neurological conditions, found no relationship between the site of brain pathology and the type of psychotic symptoms (Feinstein & Ron,1990).

The CT findings in this study do not support a theory of either diffuse or localised brain dysfunction as the likely aetiology for Cotard's syndrome.

## **(7) COMPARISON WITH OTHER BODY IMAGE DELUSIONS**

### **(a) Anosognosia**

Denial of a defect or, of the existence of a non-functioning limb, could be placed in the same spectrum of beliefs as the nihilistic delusions of Cotard. These phenomena are most often seen, after an infarct in the territory of the right middle cerebral artery has caused a left-sided stroke (Cumming,1988). They are usually transient and restricted to the acute phase. Apart from one patient who showed signs of a mild left hemiparesis, no excess of right cerebral pathology was demonstrated in the ND group, either on physical examination or CT brain scan. An aetiological link between anosognosia and ND remains therefore un-proven.

## **(b) Capgras Phenomena/Misidentification Syndromes**

Patients with these beliefs assert that they or others have been replaced by imposters either psychologically, or physically, or both. Like patients with ND, their body image - which is dependant on physical, psychological and emotional factors - is compromised. Determined efforts have been made to identify an organic aetiology for Capgras and other misidentification syndromes (Joseph,1986). Like Cotard's syndrome the evidence is based almost entirely on case reports in which the bizarre delusions have been expressed following brain damage including head injury (Silva,1989), early dementia (Förstl et al,1991) and sub-arachnoid haemorrhage (Bouckoms et al,1986). Förstl and colleagues in a recent review of 45 case reports concluded that, while the delusion developed most frequently in organic mental disease, a specific association had yet to be established. Patients with these delusions more commonly carry the diagnosis of paranoid schizophrenia in contrast to those with ND who are predominantly depressed. Moreover, compared to ND, these delusions are more widely accepted as isolated elements of psychopathology rather than part of a syndromal entity.

Delusional reduplication of parts of the body has been reported in 4 patients with brain damage (Weinstein et al,1954); the author concluded that despite the organic evidence present, the delusions could be regarded as "symbolic mechanisms to express some personal motivation, particularly the denial of illness".

While the phenomenological relationship between these delusions and ND is undisputed, there is little direct evidence from this study that they are aetiologically related. Much remains unknown about the nature of the body image in sickness and in health but it seems unreasonable to over-emphasise the role

played by organic factors at the expense of psychological and emotional mechanisms.

## **(8) CONCLUSIONS AND FUTURE RESEARCH**

**(a) Does the concept of a “Cotard Syndrome” have any validity in late 20th century psychiatry ?**

Because of the confusion between ND and Cotard’s syndrome, it has been suggested that the “syndrome” concept should be abandoned in favour of acknowledging the occurrence of ND in a variety of psychiatric conditions. This small scale investigation found 15 patients with ND. Phenomenologically, when compared to a group expressing HD, they could clearly be distinguished by their emphatic nihilistic responses. The majority showed secondary Cotard characteristics including being female, middle aged and expressing ideas of immortality as well as ND. For some the condition was chronic with poor response to treatment and persistence of disabling ND; irrespective of diagnosis, aggressive treatment was necessary to effect any improvement. These features argue in favour of preserving the syndrome concept provided that the characteristics described by Cotard are adhered to.

**(b) Final Common Pathway**

Both groups of patients in the study were characterised by having fixed delusions concerning the condition or existence of their bodies. When examined in detail, the background history and in particular details of their psychiatric histories, were strikingly similar. The clinical diagnosis and response to treatment were comparable in the two groups; ECT, either alone or with psychotropic medication, appeared necessary for a good response.

In the ND group, when the PSE interview data were analysed, five patients who were clinically thought to be suffering from depression, were diagnosed as having a non-affective psychosis. Depression was diagnosed in only one third of patients. This casts doubt on the central role of depression described by Cotard. It does however help us to understand (a) why so many of these patients (irrespective of diagnosis) were treated with a mixture of antidepressant and neuroleptic medication and (b) the assertion that NDs are frequently seen in psychotic conditions such as schizophrenia. This finding does question the classification of ND and Cotard's syndrome. Should it be classified by the dominant affective disturbance or by the objective psychotic symptomatology? While subjectively the distress and negativism seen in these patients is impressive, and for the majority, the persecuting force is internal rather than external, treatment outcomes might improve if this condition was regarded as a form of schizophrenic psychosis rather than depressive in type.

Given the similar response to treatment in the two groups and in the different diagnostic categories of the ND group, one can postulate a final common pathway for these delusions. To be effective the treatment regime needs to be aggressive and almost certainly should include ECT.

### **(c) Conclusions**

A clinical and neuro-radiological study of Nihilistic delusions is described. The preservation of the original Cotard concept - i.e. a patient, usually a middle-aged female, suffering from a chronic illness dominated by ideas of non-existence and immortality, who shows little response to treatment - is supported. The study findings are not consonant with arguments for an organic aetiology for this syndrome; personal and family factors appear to be of greater relevance. While

they bear a phenomenological resemblance to hypochondriacal delusions, little evidence was found to support the view that nihilistic delusions are an exaggerated version of the former or that a continuum of bodily delusions exists. If treatment is to be effective ECT should be considered in all cases. A shift away from the traditional view that patients with ND or Cotard's syndrome are suffering from depression is suggested.

#### **(d) Future Research**

This study has shown that patients with ND are rare and, because of their negativistic attitude, less likely to cooperate in research. Though it was conceived as a small scale investigation, the numbers were less than expected and a suitable control group was not found. These factors make it difficult to interpret some of the findings. A longitudinal study - with a larger number of patients drawn from a wider area or an established case register - is required, to determine whether the findings of this study, particularly those related to childhood hospitalisation, family psychiatric history, organicity and diagnosis, are robust.

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# APPENDIX - CASE MATERIAL

## (1) NIHILISTIC GROUP

### ND 1

Mrs C. was a 54 year old married lady whose admission was precipitated by bizarre, disinhibited sexual behaviour at home. She smashed furniture, threw herself on the floor naked and demanded sex from her husband. Some days earlier she had written a suicide note to her children. When interviewed she had a markedly depressed affect and mood, and expressed nihilistic delusions: "I'm a zombie, I've been turned upside down and inside out; I can't do anything.....it will always be like this, for eternity". These beliefs became more fixed until she stopped eating and drinking saying she had need of neither. She went into urinary retention and was transferred to a medical ward. A diagnosis of volitional retention of urine was made. With subsequent ECT treatment she made a complete recovery.

### ND 2

Mrs C. was a 44 year old married lady whose first psychiatric admission (aged 38 years) was precipitated by the discovered that her husband was having an extra-marital affair. In the intervening years she had 6 in-patient admissions with a similar presentation in each. When interviewed she stated: "I haven't got any intestines or stomach; my brain is kept alive by electricity...by his girlfriend...so I can't die, I can't have any peace". Combination therapy with anti-depressants, neuroleptics and ECT, was necessary on each occasion.

### ND 3

Ms H. was a 52 year old single lady who was brought to hospital by the police from Paddington station where she was found asleep on a train; when questioned by British Rail staff she said she was dead. She claimed to have attended her own funeral a few days previous and to have walked behind the hearse containing her body. "I don't feel real....I have no insides. Look at that dead wrist....I am dead..... I was buried on January 5th....I attended the funeral.....there's nothing inside my skin". On the ward she became overtly paranoid and suspicious resulting in a diagnosis of paranoid schizophrenia. She made some improvement on neuroleptic medication but disappeared off the ward before long term treatment could be instituted.

### ND 4

Mrs J. was a 52 year old married West Indian lady. From 1979 she presented to a variety of Gynaecologists and Physicians with complaints which were repeatedly diagnosed as "hypochondriacal ideas". In 1985 when she was assessed by a psychiatrist following a major overdose, "marked hypochondriacal features" were noted. She was followed up intermittently in the out-patient department and treated with a number of anti-depressants. By 1987 her hypochondriacal features were said to be "near delusional". One year later she expressed frank nihilistic delusions; her brain was gone, her head was filled with water and her skin had dried out. When interviewed during her admission in 1989 she said: "A man strangled me two years ago and ever since I've no organs, no brain; I can't cook, wash or iron. I've no blood.....I've just dried up. Take me to the operating theatre and take my head off and bury me. I'm suffering so bad.....my head is full of water. I know I can't die but I'd be better off if you took off my head". She also stated her heart had passed out in her faeces and she was burning all over. Treatment with

anti-depressants and neuroleptic medication improved her mood and relieved her distress though her nihilistic delusions remained, albeit with reduced intensity.

## ND 5

Mr P was a 65 year old single man who had resided in the psychiatric hospital for 30 years. Aged 29 he was referred for psychiatric help; over the next 5 years he was admitted to three different hospitals and had a 2 year period of psychoanalysis. In 1958 he was admitted following a serious overdose of sodium amytal. At that time he believed that "bizarre changes of an unspecified nature were taking place in his body". He believed "at times he does not exist". He complained of a constant fear that he was shrinking and would disappear. Insulin coma therapy, ECT and later, neuroleptic medication, did little to alter his mental state. No first rank symptoms of schizophrenia were elicited and an EEG was normal.

1964: " I'm a living skeleton - all my go is gone".

1966: " I don't know whether I'm here or not.....I can't go on like this. Why is this happening to me ?.....all my head is one block of wood - my eyes do not move or see".

1982: "Reports his head is shrinking - he has no stomach, no bladder and his jaw is twisted to one side".

1984: Similar delusions leading to an attempt at self injury when he smashed his face against a window and, with glass, extensively damaged the extensor tendons of his right hand.

1985: "I have no penis".

1989: When interviewed he asserted that he came into hospital with a body but now "all that's left is this skeleton ".

## ND 6

Mrs D. was a 71 year old married lady who was admitted 9 years prior to assessment. Her psychiatric history began in 1965 when she was transferred from a neurosurgical unit where she was treated for a sub-arachnoid haemorrhage. Over the next 7 years she had 4 admissions with depression and was treated with ECT. In 1977 she was admitted expressing marked delusions of guilt and evil eg. "I am the devil, I'm doomed to eternal damnation" (qv Damnomania) . She also had morbid fears that her children were being tortured. In 1980 she was re-admitted in a nihilistic state. She had some of the features of "resistant insanity" mentioned by Cotard (1880), eg. "she always does the opposite of what the nurses ask". A variety of treatments, including a course of 16 ECT applications, only brought temporary improvement. When interviewed in 1989 she stated: "I'm not real..... I haven't got a brain.....I haven't any insides. I'd like to die but it's impossible.....a Doctor told me years ago I would never die".

## ND 7

Mr F. was a 79 year old married man who had pernicious anaemia and sub-acute, combined degeneration of the spinal cord secondary to B12 deficiency diagnosed in 1982; he was on regular B12 injections. In 1985 he was investigated for dysphagia but no abnormality was found. One year later he was admitted to the psychiatric ward with agitated depression. He complained he could'nt swallow, could'nt eat, could'nt sleep and could'nt open his bowels. He was pre-occupied that he was going to die in the same manner as his father i.e. in a psychiatric hospital. Following treatment with an anti-depressant, he was discharged home but returned after one month, expressing nihilistic delusions. "I feel I've never been born....my brain is all gone, there's nothing there....I can't swallow anymore...there's nowhere for the food to go; my legs are dead from here (knees)

down". These delusions became progressively more entrenched. Independent of medication, he went into urinary retention for which no organic cause was found. When questioned he retorted: "How can I ? .....If I pee I'll flood the Royal Free (the hospital).....and beyond.....then what will you do ?" Despite pharmacological and behavioural treatments his delusions continued with their original intensity, though his mood improved sufficiently to allow him home.

## ND 8

Ms N. was a 79 year old single woman who was 22 years in hospital prior to interview for the study. In 1961, some weeks following a haemorrhoid operation she attended a Casualty department complaining "they destroyed my behind...it comes down at least five or six inches". No abnormality was found on examination, in particular there was no evidence of prolapse. Over the next six years she was admitted six times to the psychiatric hospital, "obsessed with her bowels"; on each occasion the diagnosis was "mild endogenous depression with obsessional features". She was re-admitted on Christmas Day 1967, having gone to Casualty demanding an enema "to cure her behind". Though she never overtly expressed hypochondriacal delusions, she frequently asked to be physically examined saying the doctors had not made a correct diagnosis ie depression. She responded to ECT though never returned to her pre-morbid level of functioning. In 1972 she believed her bowels had "fallen into the toilet" ; these ideas however did not reach delusional proportions. The first indication of nihilistic ideas appeared in the medical notes of 1979: "she felt she was dying; frequently lies down claiming to be dead". "It's all hanging out; there's blood flowing all over".

1981: "I'm dead..I have no body". Nurses comment: "Constantly repeating the same ever since. She denies the existence of her legs, head and body. Usually she is cheerful and has a jocose affect". When interviewed in 1989:" I ain't got nothing; I ain't got a body...when I first came here I walked; now...can't do nothin'. My

body disappeared years ago; I had it when I was 27 and I had it here too. I should have gone with it shouldn't I? I can't talk can I? Don't ask silly questions 'cause I can't tell you. I had an awful pain when I lost my head. How can I laugh when I haven't got a face?...I wish I could die...I'd be better off.....I can't die can I, there's nothing there to die". "How can I have a brain when I 'aven't got a head?" (laughs loudly). When asked to sit down for the interview she laughed "how can I sit down....I ain't got no bottom ". Because of the manic flavour to her beliefs she was maintained on lithium therapy.

#### **ND 9**

Ms E. was a 62 year old single lady with mild mental retardation and epilepsy. For 40 years she had lived in residential accommodation and was known to have a long history of agitated depression which resolved without psychiatric intervention. However in 1989 she became depressed and immediately expressed nihilistic delusions. "My brain is gone...I don't know where..... it doesn't exist anymore". "My heart has moved from this side (left), to the other". There were associated grandiose ideas: she believed she had the power to cut off the electricity and interfere with the hospital telephone system. She had no ideas of enormity or immortality. Treatment with an anti-depressant and ECT brought substantial improvement.

#### **ND 10**

Mrs G. was a 45 year old married lady who first became depressed aged 39. She presented with nihilistic delusions in her third admission (1989) : "I am dead..I've no heart.....I am a living corpse...an ordinary corpse could'nt do what I do; I can't eat, can't drink and they're going to burn me up. I am nothing. I'll just be thrown on the fire but still feel; there will be no end for me". As well as denying her

existence she also denied parts of the outside world: "Look out there (pointing to the square outside the hospital)...there used to be life there, now there's nothing... like me... nothing". She described associated Capgras phenomena: "the doctors are not real doctors here....they've been replaced...by imposters. My family are gone.....the people who visit are not my family....they're not who they say they are.....if only it could end..... but that is impossible". Treatment with neuroleptic medication alone brought a major change in her mental state.

#### ND 11

Mrs K. was a 52 year old married lady. In June 1988 she was referred to the psychiatric out-patient clinic with panic attacks. Six months later the attacks had increased, accompanied by profuse sweating and tachycardia. Because some depressive features were noted an anti-depressant was prescribed. However the symptoms increased, she stopped working and was admitted to hospital as she failed to comply with medication or attend the day hospital. On admission nihilistic delusions were noted: "I have no pulse, no heart, no organs", and later "I am dead.....I don't exist....I'm a skeleton. I've no flesh. Look at that dead hand". On the ward she carried around telephone numbers of Funeral Directors. She was forcibly returned to the ward from a local butcher's shop where she caused a disturbance expressing her nihilistic delusions. Her mental state improved on a combination of anti-depressant and neuroleptic medication.

#### ND 12

Mr R. was a 42 year old single man with a manic-depressive illness. In 1981, nihilistic delusions were noted on his first psychiatric admission following LSD abuse. "I'm a non-person". He stated that his hair and nails no longer grew and this was a sign of his "dead state". He believed he would eventually disintegrate

and disappear. He remained well from 1982 -1987 without any treatment. In 1987, '88, and '89, he was admitted with a manic illness. He became depressed following the last ('89) and at this stage again expressed nihilistic delusions. "I'm a zombie.. .....the walking dead.....all original impulses are gone.....the figuring process is not there anymore. I'm no longer part of the human race". "Without my spirit I'll have an eternal hell..... even if I die I'll never find peace. Suicide for me would'nt be a way out.....I'm trying to hang on to life because without that I'll be tortured for eternity". Treatment with Lithium, Dothiepin and Thioridazine, brought an improvement in his mood though he continued to express nihilistic ideas.

### ND 13

Mrs C. was a 46 year old married lady who had no past psychiatric history. In February 1989, the patient's husband moved his girlfriend to a London flat. His wife began losing weight; depressive symptoms were noted including self-neglect, poor sleep pattern and anergia. Two months later she was admitted to casualty in a coma; a major benzodiazepine overdose was diagnosed. She refused psychiatric help. By June ('89), she was expressing nihilistic delusions and was admitted to a psychiatric hospital having cut her wrists. The latter event may have been an attempt to establish body existence as she claimed "no blood came out". "My arms are dead...I've no feeling .... I've no blood in my veins". She was afraid to eat and refused medication as "there is nowhere for them to go". She believed her bowels were no longer there and the food "must be going somewhere else". She also asserted her family had disappeared: "my family are not at home....they are gone; I'll never leave here...there is nowhere for me". Despite treatment with an anti-depressant, her physical state deteriorated and she required four days intravenous re-hydration before ECT could be given (under Section 3 of the Mental Health Act). Her nihilistic delusions completely disappeared after the 6th ECT treatment.

## ND 14

Mrs E. was a 71 year old married lady who had been treated in hospital for depression in 1966 and '68. On each admission she was treated with ECT. However the case notes, from these admissions, showed no evidence of nihilistic delusions. In 1986 she had a lumbar puncture to investigate unexplained headaches. Shortly after, when seen by her GP, she expressed the belief that she was dead and had no stomach. She was transferred to a psychiatric unit, treated with ECT and though her affective disturbance improved, her delusions persisted. When interviewed in 1989: "I've no stomach.....no feeling in it.....food is going into emptiness. I am dead; there is nothing anybody can do for me. A doctor at the Whittington (hospital) perished all my insides with a needle; when I woke up they were gone !. I've no heart, no digestion; my brain is functioning,he left that. I'll never die naturally; I'll be like this for all time. Why did'nt he kill me outright ?".

## ND 15

Ms I. was a 22 year old single lady. In 1987 she was referred by her general practitioner for psychiatric assessment; her family were concerned that she had "changed" after being raped one year before. The assessing psychiatrist could "find no signs of psychiatric illness" and no follow-up was thought necessary. One year later she was re-assessed, complaining of a feeling of unease, "something not right", but was unable to explain. A delusional mood was diagnosed; shortly after she experienced pseudo-auditory hallucinations. She became intensely frightened of electrical devices and experienced thought interference. "God can put thoughts into my head.....though he sometimes takes them out". She was admitted to the Day Hospital, but was transferred to an in-patient unit when she cut her wrists. She described a force about her which made her feel like a puppet on a string. She

claimed to have seen the face of God and those of three Saints. Treatment with neuroleptic medication caused these delusions to subside and enabled her to return to the Day Hospital. There, she remained very negative, showing poor volition and developed frank nihilistic delusions two months later. "I have no brain.....when they made a recording in hospital it showed nothing.....nothing there" (an EEG tracing had recorded normal brain wave activity). She also believed her ovaries were gone and became intensely pre-occupied that other parts of her body would start to disappear. She made a good response to treatment with neuroleptic medication. The clinical diagnosis was schizophrenia, paranoid type.

## **(2) HYPOCHONDRIACAL GROUP**

### **HD 1**

Mrs B. was a 68 year old widow. Aged 16, this patient married a Romanian who died 4 years later of Cancer of the intestine. On each admission for treatment of depression, she believed she had cancer of the throat and could not be reassured. She also had delusions of poverty, saying that she was destitute though her bank balance was substantial (£150,000, 1989). In all she had 6 admissions for depression and 2 for manic episodes; simultaneous alcohol detoxification was necessary during 4 of the admissions for depression but in neither of the "manic" admissions.

1989: She believed she had a cancerous growth in her mouth which made it red and sore and caused food matter to collect around her gums. "The food goes in there; it's extremely painful and has caused all these cracks which are now cancerous". She was fully convinced she had a physical disease to account for the

symptoms and would not hear of any psychological explanation. Reassurance from ENT specialists was dismissed: “they just don’t want to tell me the truth.....I know..”. She had no history of self-harm.

## **HD 2**

Mr S was a 77 year old widower with no past psychiatric history. In March 1988, he was referred to a Gastro-enterologist complaining of “watery stools and a blockage”. Physical examination and Barium studies revealed no abnormality. Seven months later he presented to casualty with acute upper abdominal pain and complaining of being “blocked inside”. Following investigations, during a 10 day admission, he was reassured his intestines were normal. During the admission he admitted his wife died of a brain tumour 10 years earlier and he had been pre-occupied about this of late. In march 1989 he was admitted to a psychiatric unit on Section 2 of the Mental Health Act (1983). He had not eaten for several days as he was convinced he had cancer of the stomach . “I’ve got a growth there (pointing to his stomach)... my bowels won’t go..... it’s pressing on my spine....the pain goes down my legs and stops me walking”. Though he stated he could no longer walk, he grudgingly accepted he retained function following a short experimental walk down the corridor but added: “the tumour causes me to walk in an un-controlled manner”. He also had delusions of poverty: I’ve no money, no home”, and claimed “I owe thousands’ to the Gas Board”. Treatment with an anti-depressant had no effect. He was subsequently treated with ECT and made a good recovery.

## **HD 3**

In August 1988 this lady had a minor fall; there was no back, neck or head injury. One to two weeks later she became poly-symptomatic. Her greatest complaint was of severe neck pain described as a surge of pressure. She also suffered tinnitus, an

unpleasant taste in her mouth, generalised weakness, a heavy feeling in her limbs and had pain on breathing, “as if my lungs were collapsing”. Several attendances at a Casualty department revealed no demonstrable physical pathology. Having spent two weeks in bed, believing if she stood up she would faint, her GP referred her to a Neurological Unit for investigation. On admission she believed her symptoms were due to a blood infection, cancer or cystic fibrosis and that doctors were keeping the truth from her. An extensive range of investigations were all normal. During the admission she became depressed and suicidal. She was then transferred to the care of a psychiatrist. When interviewed she said “my circulation and neck are definitely affected by some physical disease.....it (blood circulator) stops here”, pointing to the base of her neck, “though there is nothing wrong with my brain”. She also asserted her heart was affected: “something has happened to it”. What? . “Maybe something has fallen down over it”, placing her hand over the cardiac area and feeling for a heart beat, “something has definitely happened to it, I can’t feel it the same as I used to. She concluded that the doctors had discovered she had “a terrible, hopeless condition” but could not “bring themselves to tell me”. Following treatment with trimipramine she made a good recovery.

#### **HD 4**

Mr J. was a 60 year old married man who had worked in New Zealand in the early part of his life. He presented to a Genito-urinary Physician stating emphatically “I have gonorrhoea”. When tests proved negative he disputed the results saying “I have gonorrhoea...that’s it...there’s a discharge which I’ve seen...I know I’ve got it....I got it in New Zealand 20 years ago and it’s been with me all these years”. He was referred for psychiatric assessment and admitted to an in-patient unit with a diagnosis of delusional depression. He was profoundly despondent stating it was useless to examine or treat him as the disease was too advanced i.e. it had been there for 20 years. A combination of anti-depressant and neuroleptic medication

brought some improvement in his mood but he continued to express his delusions.

## **HD 5**

Mr S. was a 74 year old married man who lived with his wife and un-married daughter. During 1987/88 he presented to his GP on several occasions with hypochondriacal complaints; these were associated with increasing levels of anxiety. Following referral to a psychiatric clinic, anxiety disorder was diagnosed and he was commenced on Diazepam 2mg, twice daily. In 1989 he was again referred to the Psychiatrist, "convinced he has AIDS". He complained of headaches and malaise to the point "I will have to go to bed and die". "Three years ago I picked up and smoked a cheroot I found on the street; later on I got lip sores. I know now they were caused by that cheroot and they were just the first signs of what I have now, AIDS". When questioned what he knew about AIDS, he replied: "you get an infection in the penis and your liver and kidney go funny". Repeated HIV negative results caused him initially to assert that we didn't want to tell him he had "such an awful disease" though later he changed to believing his symptoms were caused "by cancer if not AIDS". He was worried he might "do something" to harm himself to avoid the terrible end that was ahead i.e. death by AIDS/cancer.

## **HD 6**

Mr G. was a 36 year old married man. Aged 15 years (1968), he was attacked by a gang in the street and hit over the left mastoid. During the subsequent hospital admission, he was found to have an aneurysm of the left vertebral artery and adjacent veins; this was repaired surgically and he made a good recovery. However following the operation he intermittently complained his gums were

abnormal though no abnormality was detected. In 1976 and '78 he was seen by different psychiatrists who each diagnosed anxiety disorder. In 1982 he was admitted to a psychiatric hospital because of disabling anxiety symptoms; he refused benzodiazepine treatment. One year later he was re-admitted because "he had tried to kill himself at home by holding his breath". He expressed somatic complaints: "my brain is going to burst....my heart is in my neck.....I'm going to drop dead". In 1987, '88, and '89 he was admitted to a psychiatric hospital with depression and hypochondriacal delusions. "I am going to die.....but nobody is doing anything....look up there", pointing to his upper palate, "there's a tumour there that is slowly killing me.....why won't somebody do something..". At this point he broke down in tears.

## **HD 7**

Ms B. was a 71 year old with an extensive psychiatric history beginning in 1953 when she presented with thought control as well as somatic and auditory hallucinations. She was diagnosed and treated for Schizophrenia. From 1953-1985 she had 13 psychiatric admissions ranging from 10 days to 4 months duration; on each admission the diagnosis recorded was "relapse of chronic schizophrenia". 1988 - 1989: 3 admissions to a psychiatric hospital with a similar pattern to each admission; delusions of guilt, poverty and hypochondriasis. Nihilistic ideas were present though not of delusional intensity. Invariably she became convinced she had a venereal disease and believed she was dirty: "I know I've got VD...I know I've got it.....I've got a pain down here", indicating her pelvic region. The delusions were amplified by voices telling her she was a prostitute and dirty. She repeatedly asked to be "checked for VD" as her body felt "hot and burning all over". She believed the VD was spreading internally and her body was "beyond repair". No abnormality was detected on physical examination or investigation. The delusions

resolved on each occasion with ECT and on recovery, the patient was extremely embarrassed about her beliefs.

## **HD 8**

Mrs H. was an 82 year old widow with no past psychiatric history. In August 1989 the patient had an embolus in the left retinal artery causing impaired vision. As a result she could no longer drive and the task of caring for her husband, who had suffered a stroke, was made more onerous. Following his death in December (1989) she took an overdose of 300 mogadon tablets and spent several days in ITU before regaining consciousness. She went to live with her son in a different part of the country where she refused to walk and complained her bowels were blocked. "I cannot walk and my bowels do not work because I have a major disease in my abdomen". She was outraged her son had called a psychiatrist: "get me a doctor who can diagnose my stomach problem". She was later admitted under Section 2 of the Mental Health Act to a psychiatric ward where her somatic complaints increased. "My vision is going fast...soon I will not be able to see anything". Her walking also deteriorated; this she also blamed on her "bowel disease.....it is likely the cancer has spread ". Normal physical examination as well as normal barium studies failed to change her beliefs. Following treatment with ECT her somatic complaints subsided completely. She walked unaided and once more became an avid reader.

## **HD 9**

Mr A. was an 88 year old single man who was initially seen (1980) by a Geriatrician for investigation of constipation. Further history revealed more bizarre complaints. He claimed that after a bowel movement he suffered pain across his back, chest, head and neck and had severe noises in his ears. Shortly

after, he invariably experienced a burning pain inside his rectum. For these complaints he was extensively investigated and within two years had four senior medical opinions in three hospitals, none of whom could find any evidence of organic pathology. He became a regular attender at out-patients and at a number of casualty departments. Seven years after his initial presentation he was referred to the psychiatric team who found him to be depressed and pre-occupied with hypochondriacal complaints. These beliefs later developed into full delusions. His somatic complaints soon involved every body system. Though he stated "doctors say I'm beyond help", he continually asked for a "total body X-ray" so his disease could be diagnosed and treated. Intermittently he had strong biological features of depression but on each occasion he failed to comply with anti-depressant therapy. He was maintained in the community through close liaison with the Geriatrician and the community services, and twice weekly attendance at a psychiatric day hospital for the elderly.

## **HD 10**

Mr S. was a 51 year old single man who had lived with his mother until her death when he was aged 50 years. In 1972 he was assessed by a psychiatrist on a medical ward where he was admitted for investigation of vague headaches and abdominal pains as well as occasional vomiting. A diagnosis of anxiety state with somatic symptoms was made and diazepam prescribed.

1973: Referred to a psychiatrist with similar complaints. The same diagnosis was made and he was treated with Diazepam 8 mg daily.

1974: Admitted with depressive symptoms and complaining of emitting a foul odour.

- 1978: Convinced he had leukaemia, a soft brain and was wasting away. His depression lifted with ECT but his delusions persisted. Additional treatment with stelazine had some effect.
- 1979: Referred to a Neurologist with severe headaches; no abnormality detected.
- 1981: Complained of poor vision; referred to an Ophthalmologist who reported normal testing.
- 1982: Examined by Genito-urinary specialist in casualty because of "pain in testicle "; no abnormality found.
- 1982: Admitted to a psychiatric unit, believing that he had cancer, that he had sinned against God and emitted a foul odour. Successive treatment with stelazine, chlorpromazine, lithium and ECT made no change in his delusions.
- 1982: Re-admitted within one month claiming to have heard God's voice saying he had cancer; his brain was rotting and he emitted a foul smell. His symptoms responded to a combination of Lithium Carbonate, Chlorpromazine and Pimozide. He remained well for fourteen months.
- 1984: Admitted for five months (his longest admission) complaining his brain had gone soft and he had cancer. He was emphatic he had intractable diseases.
- 1984 - 1990: Annual admissions with same beliefs. "I've got leukaemia...I'm cold all over but nobody believes me....I've got an incurable brain tumour".

At times his delusions took on a nihilistic flavour: "All flesh is gone from me....I'm just skin and bone....I've gradually got worse". He had at this time lost considerable weight due to depression. Two separate courses of ECT were required in addition to anti-depressant and neuroleptic medication on this admission before he became well enough to discharge home.

## HD 11

Mrs O. was a 41 year old married Jamaican lady. In 1977 following investigation for complaints of neck and shoulder pain as well as paraesthesia and numbness in both hands, cervical spondylosis was diagnosed. However the clinician also thought she suffered from "severe anxiety" though she was neither assessed nor treated for this. In 1980 she was referred to a Consultant Surgeon for investigation of a multiplicity of aches and pains. She complained of various "lumps and bumps" which he "could not identify". A subsequent psychiatric assessment made a diagnosis of depression and suggested treatment with prothiaden.

1984: Complained of a pain in her chest and left side of her face; no abnormality was detected.

1985: Reviewed by a Consultant Surgeon when she complained of "headaches, abdominal pains and lumps on her arms (which I cannot see); believes these are caused by spirits".

1989: Admitted with depression and hypochondriacal delusions: "there's something crawling on my head....under and over my skin, as if my head opened and closed". She made some improvement when treated with a combination of imipramine and stelazine.

1990: Admitted believing "there is a hole in my head and a disease has got in and is now affecting my brain". On this admission she was markedly paranoid believing that people were interfering with her thoughts through voodoo and witchcraft. Treatment with neuroleptic medication reduced her distress and after two weeks she was discharged to the day hospital.

## HD 12

Mrs D. was a 65 year old married lady who had a past history of two minor psychiatric episodes; the first, aged 22 years, followed the break-up of a relationship, the other being post-natal. Each was of short duration and she was not assessed by a psychiatrist. In December 1988, following treatment for cardiac failure she was referred by the Cardiologist "for assessment of depression". She believed her "bust and bottom were shrivelling", her thighs were "wrinkled" and there was "poison" in her stomach as a result of a past operation. Her compliance with anti-depressant treatment was poor; she took an overdose of medication in April 1989 and again in February 1990 following which she was admitted to a psychiatric unit. On admission she had biological symptoms of depression and believed something was wrong with her brain such that she could not concentrate. She asked for a brain scan so this could be diagnosed. "You see something went click in my head and I haven't been right since. It's as if I'm not there...like a zombie or something. I sat at home and wanted to go out into the garden but couldn't; I had no will, no movement. It's terrible and there's no end to it. I tried to kill myself but it made no difference.....I can't end it".

This patient's beliefs fall most clearly between hypochondriasis and nihilism. However, despite the nihilistic flavour of these ideas, they did not carry the emphatic conviction of nihilistic delusions; they retained an "as if" quality to them and therefore belong more correctly to the realm of hypochondriasis. Treatment with ECT alone brought substantial improvement.

## HD 13

Mr S. was a 66 year old married man. He was first seen by a psychiatrist in 1953, prior to a minor operation. He was found to be agoraphobic and to have a marked

fear of dying; he believed that if he had a general anaesthetic he “might never come round”. For the next 10 years he attended a Day hospital where he was treated with LSD and psychotherapy.

1966: Admitted to a psychiatric unit and treated with chlorpromazine and sodium amytal; diagnosed as having a chronic anxiety neurosis.

1974: Collapsed at London Airport; examined by BOAC doctor who diagnosed a panic attack. He was subsequently treated with a mono-amine-oxidase-inhibitor.

1976: Emergency referral to psychiatrist with “a morbid pre-occupation with imminent demise; lies prostrate complaining of palpitations and ill defined chest pains”.

1977: An EEG queried “a long-standing left sided lesion” but a CT scan was normal

1978: Admission to private psychiatric hospital: “sure he was going to die”.

1983: Admitted to Friern psychiatric hospital following agitated and violent behaviour at home.

1985: Admitted to Friern; Clinically appeared to have an organic brain syndrome.

1989: Attended casualty on two occasions saying he was “dying”; sent home on same evening.

January 1990: Complained he had three or four heart attacks in the previous eight weeks.

March 1990: Admitted to a psychiatric unit claiming: “my left ventricle does not function.....my kidneys are failing”. His liver he said was “liverish” and he thought he had pneumonia. He accused the staff of trying to kill him by insisting he care for himself.

August 1990: Re-admitted complaining "food gets lodged in my vena cava....the doctors are holding the worst news from me..... I know I am dying". His delusions abated when he was treated with amitriptyline.

## HD 14

Mr M. was an 85 year old man who had never married. Since adolescence he had complained of abdominal discomfort. A barium meal when he was 14 years old, was normal. He was first referred to the psychiatric service in 1960 with vague somatic symptoms; no diagnosis was made. One year later he was diagnosed as suffering from depression and treated with an anti-depressant. His condition remained unchanged during follow-up over the next two years.

1968: Admitted to a psychiatric unit and treated with ECT; some improvement noted.

1972: He reported a "40 year history of pain and fullness" when seen by a gastro-enterologist complaining of epigastric pain and constipation. No abnormality was found.

1976: Re-referred to the psychiatric out-patient department. Diagnosed as "hypochondriacal with a chronically inadequate personality".

1977: " Depressed" ; treated with diazepam and prothiaden.

1978: Though depressive symptoms remained unchanged he was discharged to the care of the GP. Returned to casualty one week later expressing suicidal ideas.

1979: Investigated for clinically diagnosed diverticulitis; barium studies were normal.

1980-'82: Intermittent suicidal ideas; treated with prothiaden.

1984: Admitted by physicians for investigation of nausea and vomiting. Discharge diagnosis: "as healthy as an athlete".

1984: Prostatectomy.

1985: Admitted for investigation of "irritable bowel". Repeat barium studies were normal.

1986-1990: Attended the psychiatric day hospital intermittently. Never complied with a full course of anti-depressants.

1990: Admitted as an in-patient. Expressed hopelessness as well as the sustained belief that he had a serious bowel disorder which nobody wanted to do anything about. Though guarded, he believed he had cancer of the bowel and added "the reason they say all the tests are normal is that they all show the same thing.....and nothing can be done".

He refused ECT; he was commenced on a mono-amine-oxidase inhibitor but took his own discharge within two weeks of treatment.

## HD 15

Mr M. was a 78 year old married man who drank up to half a bottle of gin each day until 2 months prior to presentation when he was admitted to a medical ward for alcohol detoxification. Despite his longstanding alcohol abuse he had no previous medical admissions and had no past contact with psychiatric services. April 1989: admitted to the psychiatric unit following a domiciliary visit. He was agitated, depressed, expressing ideas of guilt and worthlessness mixed with paranoid beliefs. "The police are coming to take me away....I'm ashamed to go out". He made an impulsive attempt at self harm by cutting his wrist with a Stanley knife. Following treatment with ECT, he was discharged home but was re-admitted after one week when he presented in the out-patient department in an extremely agitated state, expressing guilt about picadillos eg. at some time in the past he had forgotten to switch off the lights in the Off Licence where he worked.

May 1990: Admitted for 2 months and treated again with ECT.

August - November 1990: Re-admitted as an emergency since he had stopped eating and drinking for five days believing his bowels were "full of cancer". He was treated with ECT followed by Fluoxetine. During this admission he developed marked somatic complaints including abdominal pain, constipation as well as the belief he was passing blood per rectum; no evidence for any of these complaints could be found. Ultra-sound examination, barium enema and colonoscopy were all normal. Despite these reassuring results he firmly believed he had cancer. "I'm going to die soon but the doctors won't tell me...they know it's there (cancer)". In patients' groups he could talk of nothing else except his imminent death from cancer.

## HD 16

Mr F. was an 82 year old married man with two married daughters living in Canada; he had no past psychiatric history. October 1987: Referred to the psychiatrist with a one month history of increasing anxiety and obsessional symptoms; spending long periods checking door locks and electrical switches for faults. He was depressed, agitated and was convinced he had contracted venereal disease during the second world war (his medical certificate from the army, in his possession, showed that physically, he had been quite healthy). "It was when I was with the 8th army in north Africa...that's where I caught it. Now I've passed it onto my wife and it's caused her to go funny". His wife had for many years been diagnosed as schizophrenic. He also believed he had passed it onto his children which would "lead to catastrophic results in the future and destroy their health". The junior doctor noted "he engaged me in endless circular discussions about his morbid fears". Treatment with a combination of lofepramine 140 mg, and trifluoperazine 1 mg, daily lead to some improvement and discharge home.

January - May 1988: Admitted because of worsening depression; extremely self-reproachful and pessimistic as well as the delusion concerning venereal disease. Continuation of the same treatment brought no relief. ECT caused the delusions to subside briefly but after a one week discharge he was re-admitted for further treatment.

1989/1990: Three further admissions (each lasting one month) with same presentation and on each occasion he received ECT. On the last admission he wondered if "it might be AIDS; if not AIDS then definitely VD...I've had it all along only the doctors can't make the diagnosis".

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