Title: Survival and seizure control have improved for adult low-grade gliomas over the last eleven years

(16/20 words)

Abstract:

(237/250 words)

Background: There has been a trend towards earlier and more aggressive resection for adult Low-Grade Gliomas (LGG) in the last decade. This study set out to compare seizure control and survival of unselected adults with LGG seen in the same neuro-oncology clinic over 11 years and to determine if a change in surgical philosophy has led to a corresponding improvement in outcomes.

Methods: Retrospective analysis using case-note review of 153 adults with histologically verified or radiologically suspected LGG, collecting data on patient, tumour and seizure characteristics in 2006 and 2017.

Results: We studied 79 patients in 2006 and 74 patients in 2017. There were no significant differences between the two groups in age at presentation, tumour location or histological or molecular subtype. The numbers of complete or partial resections increased from 21.5 % in 2006 to 60.8% in 2017 ($p<0.05$). There was a highly significant improvement in 5- and 10-year survival from 81.8% and 51.7% in 2006 to 100% and 95.8% in 2017 ($p<0.001$); and a similar improvement was seen in progression free survival. The proportion of patients with intractable epilepsy reduced from 72.2% in 2006 to 43.2% in 2017 ($p<0.05$). The neurosurgical morbidity rate was identical in both groups (11.8% in 2006 vs 11.1% in 2017).

Conclusion: Increasing use of surgery for LGG over the last eleven years has led to substantial improvements in survival and seizure control but not at the cost of long-term morbidity.