Rupture of a caesarean scar during a trial at vaginal birth: A dramatic consequence as old as the modern caesarean section.

John Hunter (1728-1793), the father of modern surgery, is credited among other pioneering surgical procedures to have performed the first caesarean section (CS) delivery using an evidence-based anatomical approach (Moore W, The Knife Man, Bantam press, 2005). Even if his procedures were technically successful - and Hunter managed to deliver a few live and surviving babies - the mother inevitably died, mainly due to the lack of suitable suturing material, and wound infection. Thus until the 19th century, CS remained a surgical procedure of last resort performed almost exclusively to save the baby's life. It is only when surgeons started to suture the uterus after delivery that the maternal death rate started to fall below 100%. Further technical advances in surgical techniques during the early 20th century reduced the complication rates of CS substantially. As a result, mothers not only survived the surgical procedure but were also able to have one or more subsequent pregnancies.

With the rising numbers of CSs came new complications in subsequent pregnancies and in particular rupture of the previous uterine scar. In 1921, in a special issue on CS of the Journal, Eardley Holland (1880-1967), Consultant at the London Hospital, reported on five cases of scar rupture leading to maternal death during pregnancy or labour (J Obstet Gynecol Br Emp 28:488-522). Holland recalled having performed the primary caesarean section of one these patient five years earlier and he stated: "The occurrence of these treacherous accidents made a very great impression on the minds of myself and my colleagues". His inquiry indicated that there was little information about the causes and frequency of scar rupture after CS and that "certain surgeons were so afraid of ruptured scar that they sterilize their patients at the first operation".

The classical CS is associated with the greatest damage to the uterine wall and not surprisingly with the highest risk of ruptured scar in subsequent pregnancies, before and during labour. Low segment CSs are rarely associated with spontaneous scar rupture during pregnancy, but are observed in 1 in 250 spontaneous labours, and the risk is higher when labour is induced with prostaglandins (Landon et al., NEJM. 2004, 351:2581-9). However, the reason why, some women rupture their scar and others do not, remains unclear. Variations in surgical techniques or different suture material used do not seem to explain scar rupture in subsequent pregnancies (Roberge et al., Int J Gynaecol Obstet 2011;115:5-10).

The use of continuous fetal heart monitoring during labour and access to fluid infusion and blood transfusion has reduced fetal and maternal morbidity and mortality in deliveries complicated by ruptured uterine scar. The data analysis of a representative sample of the French obstetric population indicates that the incidence of elective repeat CS is well above that expected from the national guidelines for women eligible for a trial of scar (Bartolo et al., BJOG, in this issue). They suggest that non-medical reasons are involved in the decision. Perhaps collective memory of the dramatic consequences of a ruptured scar still influences doctor and patient choice.

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Figure 1 from Holland

Disclosure of interests

I declare no conflicts of interest.

E Jauniaux, MD, PhD, FRCOG
Scientific Editor BJOG
Professor
Academic Department of Obstetrics and Gynaecology
Institute for Women's Health
University College London
London, UK.