An Audit of Classical Caesarean Sections in a Tertiary Level Hospital

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Introduction

Classical caesarean sections (CCS) are rare but performed for many reasons, including preterm labour, difficulty accessing the lower uterine segment, placenta accreta spectrum, uterine abnormalities, fetal malformations and fetal lie [1,2]. The serious consequence of a classical caesarean section is a uterine rupture in subsequent pregnancies [1,3]. There are very limited studies reporting on the incidence of CCS on review of the literature.

Aims

Our aim was to audit the number of CCS and their indications in a tertiary level hospital.

Methodology

We collected data from operation records to identify patients who had a CCS over a one-year period. Electronic medical records were reviewed for corresponding data.

Results

A total of five patients were identified between January 2023 to December 2023. Of these, two were midline classical uterine incisions, two were transverse upper segment uterine incisions and one was an inverted T uterine incision. Two had midline abdominal skin incisions and the other three had Joel Cohen skin incisions.

The most common indication was a major placenta praevia (n=3). The other two indications were difficulty accessing the lower uterine segment (n=1) and a shoulder dystocia against a thick anterior segment (n=1).

The gestational age at delivery was diverse, two were delivered at early pre-term (≤ 34+0 weeks gestation), one at late pre-term (34+0 to 36+6 weeks gestation) and two at term (≥ 37+0).

Out of the five cases, two were emergency procedures.

Table 1. CCS audit indications, associated skin incision, uterine incision and gestational age at delivery.

Type of caesarean section	Indication	Skin incision	Uterine incision	Gestational age at delivery
Classical	Major placenta praevia (MPP) Large fibroid displacing the uterus	Sub-umbilical midline	Vertical midline	37+1
Classical	Poorly formed and vascular lower uterine segment MPP Transverse lie	Joel Cohen	Vertical midline	38+0
Caesarean hysterectomy	MPP Placenta percreta	Midline	Transverse upper segment	32+2
Transverse upper segment	Difficulty accessing lower uterine segment due to adhesions	Joel Cohen	Transverse upper segment	29+2
Inverted T	Shoulder dystocia against a thick anterior lower uterine segment	Joel Cohen	Transverse lower segment with inverted T	36+3

Discussion

The incidence or rates of CCS are unknown as there is very limited data in the literature. The indications for performing CCS are varied and the decision is made at the time of the procedure.

RCOG's Birth after Previous Caesarean Birth guideline uses a 1998 study on the recommendations of risk of a uterine rupture with a CCS [4, 5]. This study included 62 patients over a twelve-year period that had a "vertical upper uterine segment incision", in which there fifteen subsequent pregnancies. In these fifteen pregnancies, there was one scar rupture and two "scar separations"[4]. The RCOG guideline advises that there is insufficient data to support the safety of a VBAC with a history of previous inverted T or J incisions or low vertical incisions.

RANZCOG's Best Practice Statement on Birth after previous caesarean section uses the 2007 RCOG's Birth after Previous Caesarean Section guideline, advising the risk of a uterine rupture is increased with a previous CCS or previous inverted T or J incisions or low vertical incisions [6].

A 2023 population study identified 18,575 women with a prior vertical incision demonstrated a 3-fold risk of placenta percreta and doubled risk of uterine rupture compared to prior lower segment incision [3].

Although CCS are not performed regularly, there is a need for procedural training and further studies are needed into complications and outcomes of a CCS. Other studies are needed in subsequent pregnancies following a CCS, including the rates of uterine rupture and abnormal placental implantation.

References

1. Kan A. Classical Cesarean Section. Surg J (N Y). 2020 Feb 6;6(Suppl 2):S98-S103. doi: 10.1055/s-0039-3402072. PMID: 32760792; PMCID: PMC7396476.
2. Berghella V. Cesarean birth: Surgical technique. In UpToDate, Connor RF (Ed), Wolters Kluwer. (Accessed 12th March 2025).
3. Sangara RN, Youssefzadeh AC, Mandelbaum RS, McCarthy LE, Matsuzaki S, Matsushima K, Kunze M, Klar M, Ouzounian JG, Matsuo K. Prior vertical uterine incision: Effect on subsequent pregnancy characteristics and outcomes. Int J Gynaecol Obstet. 2023 Jan;160(1):85-92. doi: 10.1002/ijgo.14195. Epub 2022 Apr 8. PMID: 35332929.
4. Greene RA, Fitzpatrick C, Turner MJ. What are the maternal implications of a classical caesarean section? J Obstet Gynaecol. 1998 Jul;18(4):345-7. doi: 10.1080/01443619867083. PMID: 15512105.
5. Royal College of Obstetricians and Gynaecologists. Birth after Previous Caesarean Birth (Green-top Guideline No.45), 2015. Available from: https://www.rcog.org.uk/media/kpkjwd5h/gtg_45.pdf
6. Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Birth after previous caesarean section (C-Obs 38), 2019. Available from: https://ranzcog.edu.au/wp-content/uploads/Birth-After-Previous-Caesarean-Section.pdf