Caesarean Section

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27.1 Background

The medical legal problems of caesarean section (CS) relate to complications of the procedure itself or where there is a delay in delivery of the baby in a situation of fetal compromise. There are also potential long-term risks for both the mother and the baby. These various factors produce the dilemma of the balance of risks and benefits to the mother and the baby. This has been further complicated by Montgomery v Lanarkshire Health Board findings on the role of consent [1]. Advances in medical practice means that CS delivery is now almost as safe as vaginal birth leading to a change in the balance of risks and rising rates. CS is now seen as less of a medical procedure and more of a treatment choice in which the mother has a significant role. Despite the relative safety, CS remains at the centre of maternity medical litigation. The NHSLA recently published figures showing that there have been 674 claims related to caesarean section since 2000. This led to a litigation cost of £2,126,167,223 (Table 27.1). The majority of claims are for complications of the procedure, but the costs are related mostly to delay in the carrying out the procedure leading to complications for the baby such as hypoxic ischaemic encephalopathy (HIE) and cerebral palsy (CP) [2, 3].

27.2 Minimum Standards

There are various documents that cover aspects of caesarean section and the decisions to carry them out, including NICE Clinical guideline (CG132) [1] and NICE Quality standard (QS32) [2, 3].

A consultant needs to be involved in the decision to carry out an elective or emergency CS. The mother needs to be involved in the decision-making process and be fully informed of the risks.

Planned caesarean sections should be carried out at or after 39 weeks, unless an earlier delivery is necessary because of maternal or fetal indications.

Much of the reasons behind litigation involving CS relates to delays in carrying out the procedure. The decision to delivery interval is based on the classification of CS (Table 27.2) of which only the first two are relevant here. Category 1 is an emergency CS delivery as soon as possible. The aim is for a decision to delivery interval of 30 min. Category 2 is a CS requiring delivery within a reasonable timescale without taking risks. The aim is for a decision to delivery interval of between 30 and 75 min depending on the level of concern.

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Table 27.1 Reasons, numbers and claims associated with caesarean section

Reason	Number	Litigation cost (£)	Cost per claim (£)
Complications of procedure	533	45,099,097	84,614
Delay in procedure	115	154,736,115	1,345,531
Other	26	16,332,011	628,154
Total	674	2,126,167,223	320,589

Table 27.2 Classification for urgency of caesarean section [4]

Grade	Definition
1. Emergency	Immediate threat to life of woman or fetus
2. Urgent	Maternal or fetal compromise which is not immediately life-threatening
3. Scheduled	Needing early delivery but no maternal or fetal compromise
4. Elective	At a time to suit the woman and maternity team

Lucas DN, Yentis SM, Kinsella SM, Holdcroft A, May AE, Wee M, Robinson PN. Urgency of caesarean section: a new classification. J R Soc Med. 2000;93:346–50

In the classification system by Lucas et al the classification refers to the timing of the decision to operate. For example if a case was booked as an elective procedure for malpresentation, the classification would be a grade 4, but if she went into labour before the chosen date (or even if she didn't go into labour, but had delivery before the scheduled date) the classification would change to 3. Similarly if there was fetal bradycardia which responded to treatment and the patient needed subsequent delivery for failure to progress, it would be classified as grade 3 rather than a 2. Caesarean section is a surgical procedure and as such is associated with the complications of any major surgery. Prior to surgery there should be an assessment of haemoglobin to identify anaemia.

If the risk of bleeding is high, blood transfusion services should be available and cell salvage should be considered. Regional anaesthesia is the preferred option although the decision will be based on both obstetric and anaesthetic considerations as well as taking into account maternal preference where possible. An indwelling urinary catheter should be placed to prevent over-distension of the bladder and remain in situ until the patient is mobile. To prevent inhalation injury, antacids and drugs to reduce gastric volumes and acidity should be given. If a general anaesthetic is used than pre-oxygenation, cricoid pressure and rapid sequence induction should be carried out to reduce the risk of aspiration. The WHO surgical safety checklist for maternity cases should be used (see Fig. 27.1). The operating table should have a lateral tilt of 15° to avoid aortocaval compression. Safe surgical practice should be followed to reduce the risk of HIV infection of staff. Prophylactic antibiotics should be given before skin incision according to local antibiotic guidelines. A risk assessment for venous thromboembolism (VTE) should be undertaken and thromboprophylaxis given as per existing guidelines. The skin incision will vary according to the clinical indication for the procedure, but in general a transverse abdominal incision should be used, 3 cm above the symphysis pubis with subsequent tissue layers opened bluntly and extended with scissors. The lower uterine segment should be extended by blunt extension of the uterine incision. The baby will be delivered either manually or with the use of Wrigley's forceps. Both venous and arterial cord pHs should be performed after all CS for suspected fetal compromise, to allow review of fetal wellbeing and guide ongoing care of the baby. The placenta should be removed using controlled cord traction and not manual removal as this reduces the risk of post-partum complications including uterine inversion. The uterine cavity should be checked and ensured it is empty. The uterus should then be closed in two layers with an absorbable suture with closure in layers for the rectus sheath and the skin.

A senior obstetrician should be present for complicated caesarean sections including full dilatation sections where there may be difficulty in delivery of the baby's head from the pelvis. Pushing the baby's head up from below may aid delivery, but it can also lead to a "ping-pong ball" skull fracture in the baby. In addition, a section at full dilatation carries an increase in both maternal and fetal complications [6]. Other indications for a senior obstetrician to be present include major placenta praevia or accreta, extreme prematurity with

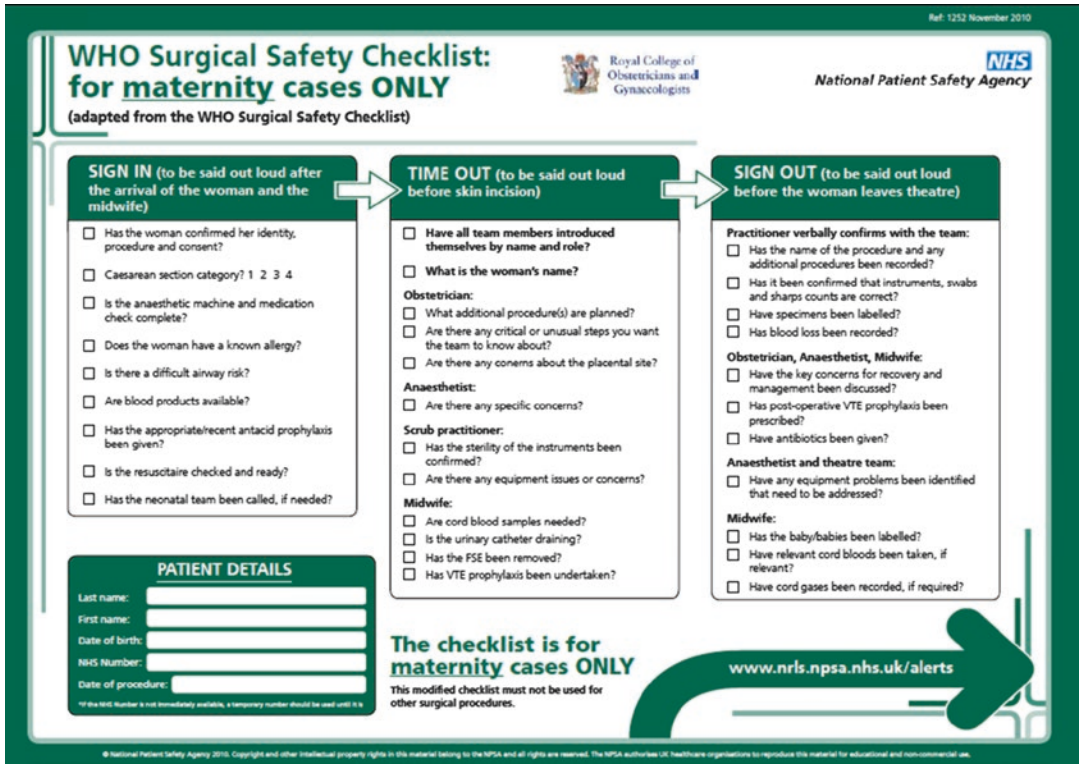

Fig. 27.1 WHO surgical safety checklist for maternity cases only [5]

or without ruptured membranes, raised body mass index, previous difficult operative procedure and large maternal fibroids. When a midline abdominal incision is used, mass closure with slowly absorbable continuous sutures should be used.

Women undergoing caesarean section whether as an emergency or electively should be aware of the material risks [7]. The risk of fetal lacerations is about 2%. Particular care should be taken when the CS is being carried out after rupture of the membranes and at full dilatation when the uterine wall is thin. Short term risks include wound infection and breakdown sometimes leading to sepsis, injury to the bladder, bowel and other structures and the potential need for blood transfusion. There is increasing evidence of long term sequelae to CS, with risk of infertility, ectopic pregnancy or rupture of the uterus in subsequent labours. The explanation of these risks need to be part of any informed consent process. For category 1 caesarean sections where there is no time to get written consent, verbal consent is permissible.

27.3 Clinical Governance Issues

All complications of caesarean section should be reported according to the maternity guidance. The RCOG suggests a number of triggers for incident reporting in Obstetrics as detailed in Table 27.3 [8]. The clinical governance issues surrounding caesarean section can be broadly divided into maternal, fetal and organisational. Maternal governance issues will include failed operative delivery leading to full dilatation caesarean section, blood loss greater than 1500 mls, caesarean hysterectomy, intensive care admission, return to theatre, anaesthetic complications including inadequate analgesia and uterine rupture or dehiscence. Fetal complications will include fetal lacerations and birth trauma, low Apgar scores, low cord gases and unexpected admission to the neonatal unit. Organisational issues may include delayed delivery, unavailability of a theatre or theatre staff or equipment failures.

Table 27.3 RCOG Clinical governance advice No.2 [8]

Suggested trigger list for incident reporting in maternity		
Maternal incident	Fetal/neonatal incident	Organisational incident
Maternal death Undiagnosed breech Shoulder dystocia Blood loss > 1500 mL Return to theatre Eclampsia Hysterectomy/laparotomy Anaesthetic complications Intensive care admission Venous thromboembolism Pulmonary embolism Third-/fourth-degree tears Unsuccessful forceps or ventouse uterine rupture Readmission of mother	Stillbirth > 500 g Neonatal death Apgar score < 7 at 5 min Birth trauma Fetal laceration at caesarean section Cord pH < 7.05 arterial or < 7.1 venous Neonatal seizures Term baby admitted to neonatal unit Undiagnosed fetal anomaly	Unavailability of health record Delay in responding to call for assistance Unplanned home birth Faulty equipment Conflict over case management Potential service user complaint medication error Retained swab or instrument Hospital-acquired infection Violation of local protocol

All such events should be examined by the risk management process. The process of investigation should include patients and their families and there should be an open and honest approach when things go wrong. Documentation is a key concern. There should be appropriate documentation concerning the risks of caesarean section on the consent form and there should also be detailed operation notes for complicated procedures. Claims are easier to defend where good documentation exists. Where themes are identified these should be investigated and are particularly concerned with operative complication rates or returns to theatre that may identify an individual requiring support, supervision or further training.

27.4 Reasons for Litigation

- The indication to perform a caesarean section
- The delay in carrying out the procedure
- Maternal complications of the procedure
- Fetal complications occurring during delivery
- Short and long-term sequelae
- Failure to document all the material risks on the consent form
- Poor documentation of complicated procedures
- Inadequate anaesthesia
- Failure to request a neonatal team at delivery
- Inadequate resuscitation at delivery

27.5 Avoidance of Litigation

Avoidance of litigation is based on the appropriate preparation starting with informed consent. The mother needs to understand the complications of the procedure and the risks of alternative interventions. Hospitals need to have robust escalation processes to allow for the identification of fetal compromise, rapid escalation and transfer to theatre, with an aim to delivery within 30 mins.

Although speed is important, this should not be at a cost of increased risk to the mother or baby.

The operator should have the appropriate skills and experience or supervision to carry out the procedure. Particular risks should be assessed, and plans put in place to mitigate them. Such situations include placenta praevia or accreta where preparation with the appropriate clinicians present improves the response to complications. Training should concentrate on good surgical practice and particularly on the delivery of the baby's head from the pelvis. The use of skills and drills training help to provide experience of situations that are rare but that have potentially serious outcomes if not dealt with appropriately.

27.6 Case Study

Jac Richards v Swansea NHS Trust (2007) EWHC 487 (QB) 13/3/07 [9, 10].

Jac Richards was delivered by caesarean section at 14:25 on 15 May 1996. At the age of 10 years he was severely disabled resulting from an acute hypoxic ischaemic insult to the brain at or around the time of delivery. The medical experts in court agreed the ischaemic insult began 15–20 min before birth. The judgement relied heavily on the existing guidelines and the judge pragmatically determined that 'once the decision had been taken to deliver Jac by emergency caesarean section, the defendant owed a duty of care to Jac to deliver him as quickly as possible with the aim of trying to deliver him within 30 min. If the failure to deliver him within 30 min had been shown to be due to the limited resources of the defendant or constraints on those attending Mrs. Richards, e.g. the need to deal with other pressing cases, the primary claim would have failed, but no evidence of matters affecting the speed of Jac's delivery was placed before the court. Therefore, the defendant had negligently failed to deliver the claimant as quickly as possible whereas, had it not been negligent, the claimant would have been born without disability. Therefore, the Claimant had established on the balance of probabilities that his delivery some 55 min after the decision had been taken to carry out the Caesarean amounted to a breach of duty.

Key Points: Caesarean Section

- Adequate preparation before the procedure including patient choice
- Decision to delivery interval appropriate to the risk
- Procedure undertaken by adequately trained surgeons with the appropriate supervision if required
- Good surgical technique with prompt recognition of complications and their management
- The risk of complications such as placental position, full dilatation or a deeply impacted fetal head should be assessed and plans put in place prior to starting the procedure
- Accurate documentation and operation notes detailing all complications
- Appropriate use of antibiotics and thromboprophylaxis
- The presence of a neonatal resuscitation team if there is evidence of fetal compromise
- Appropriate follow up of patients

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