Title : Consensus Statement for Ceserean section

Consensus Statement for Ceserean Section
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Caesarean Section (CS)

Caesarean section particularly lower segment CS is one of the most commonly performed operations. With the evolution in anaesthesia, antibiotics, techniques, operative skills and availability of blood it has become much safer than earlier days.

India is a vast country and the type of hospitals will vary, depending on

- Geography (urban, rural)
- Economics and availability of trained personnel
- Public, private or trust hospitals, teaching hospitals, nursing homes

Guidelines cannot possibly include all clinical scenarios so individualization may be necessary as demanded by situations.

But minimum standards should be maintained.

Minimal Standards of care –

This guideline proposes minimum standard of care that should be followed.

1.) Information to woman
2.) Planned LSCS
3.) Procedural aspect
4.) Care of the woman

1.0 **Information to woman** -

Pregnant women should be offered evidence based information and support to enable them to make informed decision about childbirth with option of vaginal birth after caesarean section.

1.1 Women centered care

1.1.1 General information

Provision of information (in the patient's language) offers evidence based information and support to a pregnant woman. It will enable her to make an informed decision about childbirth. This should also address her believes, views and concerns.

1.1.2 Information about CS:

Provision of information should start during the antenatal period. This should include:

- Possible indications for CS
- What the procedure involves
- Associated benefits and risks
- Implications for future pregnancies and birth after CS

1.2 Place of Birth:

1.2.1 Ideally every woman should be delivered in a suitable and adequately equipped health care facility. She should be familiar to the place where she delivers.

1.2.2 Process of labour should be closely monitored to facilitate timely referral to higher centre. This could be done with the help of partograph.

1.3 Decision making of caesarean section (CS):

1.3.1 Discuss the benefits and risks of CS as compared with vaginal birth with the pregnant woman and her relatives to help them to make a decision.

1.4 Urgency of CS

Urgency of CS should be determined and are categorized in following

1 immediate threat to the life of the woman or fetus

2 maternal or fetal compromise which is not life-threatening

3 no maternal or fetal compromise but needs early delivery

4 planned delivery

Category 1 and 2 should have procedure as quickly as possible.

1.5 Maternal indications:

1.5.1 Gross cephalo pelvic disproportion

1.5.2 Major degrees of placenta previa

1.5.3 Obstructed labor

1.5.4 Deep transverse arrest

1.5.5 Previous LSCS

1.5.6 Abruptio placenta

1.5.7 Previous uterine surgery

1.5.8 Premature rupture of membranes (PROM) for > 24 hours

1.5.9 Associated gynaecological disease – fibroid, anomaly

1.5.10 Poor Bishop's score despite cervical priming

1.5.11 Chorioamnionitis

1.5.12 Severe HDP, eclampsia (not responding to magnesium sulphate)

1.5.13 Previous history of classical caesarean CS

1.5.14 Previous history of fistula repair

1.5.15 Advanced cases of carcinoma cervix

1.5.16 Vaginal stenosis or atresia

1.6 Fetal indications:

1.6.1 Malpresentations - transverse, oblique, mentoposterior.

1.6.2 Pregnant women with singleton term breech presentation with:

Especially Big baby, footling presentation, Stargazing fetus, complicated breech etc.

1.6.3 Multiple pregnancies where the first twin is not a cephalic presentation

1.6.4 Fetal Distress / jeopardy

1.6.5 Cord prolapse

1.6.6 Fetal disease – hydrocephalus, Sacrococcygeal teratoma

1.7 Other indications:

1.7.1 Caesarean delivery on maternal request

Occasionally CS is requested by a pregnant woman. This must be followed by balanced counseling of risks and benefits of CS vis. a vis. vaginal delivery. The decision thus made by patient should be respected.

1.7.2 Maternal Infections :

CS as an alternative to reduce mother-to-child transmission of infections in cases of :

- HIV positive women not on ART
- HIV positive women on ART with HIV-RNA levels >400 copies/ml
- Co-infection with hepatitis C

- Primary genital herpes simplex infection if premature rupture of membranes (PROM)within 4 hours

1.8 Consent for CS

Consent for CS must be requested after providing the pregnant women with evidence based information in a manner that respects the woman's privacy, views and culture whilst taking into consideration the clinical situation.

1.8.1 Consent should be taken in the language understood by the patient and never implied. Patient should be explained that though techniques of anesthesia and surgery are advanced, yet there may be complications due to anesthesia , procedural complications like hemorrhage, infection, soft tissue injuries and injury to the baby. However all possible precautions will be taken by the performing team of doctors to minimize the complications.

1.8.2 In case a patient is unable to sign, a left thumb impression is taken.
If the patient is not in a position to give a consent and consent should be obtained from relatives. In case of minors < 18 years, guardian consent is necessary.
A 100 % favorable outcome of the mother and the baby is never guaranteed.

1.8.3 Patient may opt for refusal of CS being oblivious of benefits to her and her baby's health. She has to be counseled again. Despite this If there is a refusal of consent it must be documented on paper.
If the procedure is life saving, CS is performed without valid consent.

2.0 Procedural aspect -

2.01 Basic investigations are required –
Hb, Blood Grouping and Rh typing, HIV, HbsAg, BSL, Urine routine examination. Other investigations like HCV(hepatitis C) should be done on availability.

2.02 Cross matching is recommended in cases like Rh negative ,severe anaemia, placenta praevia, adherent placenta, coagulopathy, sepsis, prev cs and in conditions thought essential by obstetrician. It is preferable to cross match blood / blood products for all patients undergoing CS. However non availability of blood should not prevent obstetrician from performing CS for emergency conditions.

2.03 IV line to be taken with large bore needle (minimum 16 /18 gauge).

2.04 Prophylactic antibiotics for LSCS
Antibiotic to be decided by the obstetrician depending on local protocol.
Preferred drug used is second generation cephalosporin. Three doses in the perioperative period are recommended. In case of PROM/ multiple vaginal examinations; antibiotics to be continued for 3-5 days.

3.0. Preoperative requisites

3.01 Theatre should be clean (adequate space and ventilation)

3.02 Emergency drugs and equipments should be in working condition

3.03 Adequate sterile linen, gowns and other supplies should be available

3.04 It should preferably be adjoining the labour suites. All staff working in these areas must be trained about systems management.

3.05 The following equipment must be checked regularly and ensured to be in working condition :

- Boyle's apparatus
- B.P apparatus, pulse oximeter
- Cautery and suction machines
- Availability of continuous supply of oxygen and other gases

3.06 For the newborn, arrangements should be made for suction machine, sterile tubing, laryngoscope, endo-tracheal tubes, overhead light / warmer.

4.0 Type of Anesthesia

The type of anesthesia should be decided by the anesthesiologist and the obstetrician in conjunction with patient.

1. Spinal – Spinal anesthesia is reliable, has rapid onset, patient is awake and there is less risk of aspiration. There is not enough evidence from trials to evaluate use of lateral tilt during CS .
2. Epidural – Epidural anesthesia has less of hypotension and good post operative analgesia can be offered.
3. General – It is mostly used when regional is contraindicated, in cases of sepsis, hypotension, thrombocytopenia <75000, coagulation disorder, CHD. Unusual complications include aspiration, neonatal depression.

In an exceptional situation, CS may be performed under local anesthesia.

5.0 Skin Incision

5.01 Pfannensteil Incision:

It is curved skin incision, two fingers above the symphysis pubis. It is associated with less postoperative pain, has cosmetic appeal, low wound dehiscence and less chances of herniation.

5.02 Transverse (Joel Cohen's Incision) :

Joel Cohen incision is a straight skin incision 3 cm above the pubic symphysis. Here subsequent tissue layers are opened bluntly (scissors used for extension), has shorter operating time and reduced postoperative febrile morbidity

5.03 Vertical Incision: Traditional (infraumbilical vertical or paramedian) incision was used previously extensively. It is now usually avoided since it has more post op pain, low cosmetic appeal, more chances of hernia.

6.0 Uterine Incision

It is an important surgical step and should be planned preoperatively. Type of incision must be mentioned in case notes and all other records.

6.01 Lower segment Transverse (Kerr) incision:

It is most commonly used, 1-2 cm cut , extended transversely with

scissors / digitally when lower segment is well formed, blunt rather than sharp extension of the incision should be used as it reduces blood loss, intra-operative haemorrhage and need for blood transfusion.

6.02 Lower segment vertical (Kronig / De Lee) incision:
It is not commonly used .It may be done in cases of poorly formed lower segment and pre-term patients this incision may be an option. Risks of extension should be kept in mind.

6.03 Classical Incision : It is rarely required except when access to lower segment is not possible

6.04 T-shaped incisions:
If required J-shaped or U-shaped incisions are preferred to T incision. These incisions may be required in case of difficult delivery. It is associated with poor healing and increased postoperative morbidity thus should be reserved in special situations only.

7.0 Delivery of Baby :

7.01 Everyone is familiar with the technique of baby delivery in a cephalic presentation. Maintaining the flexion of the fetal head during delivery reduces the diameter and eases the delivery. This also reduces undue extensions of the uterine incision and excessive hemorrhage and time required for the CS. One must avoid hasty baby delivery. Also the person doing should be well versed with different maneuvers for baby delivery during a CS and ask for prior assistance.

7.02 Difficult baby deliveries
a.) High floating head: Rupture of membranes followed by suctioning of liquor, allow vertex to descend to incision site, then flexion and delivery. Use of vacuum or short forceps is also possible.
b.) Deeply engaged head : Disimpaction with vectis or manually, abdomino-vaginal method or Patwardhan's maneuver as appropriate.
c.) Breech : should be delivered with same care as in vaginal breech delivery. Head is delivered by either Burn's Marshall technique or Mauriceau Smellie Veit method or using forceps

7.03 The most important pre-requisite to any difficult delivery is that it should be conducted by an experienced operator. Instrumental delivery should be conducted by person who has expertise in using it.

7.04 During CS skilled personnel should be available for neonatal resuscitation and in case of a presumed fetal compromise a skilled obstetrician and a neonatologist should be available. In some situations like a floating head, deeply engaged head, or malpresentations like breech ,transverse lie, multifetal pregnancies or premature babies, special skill is required to deliver these babies without causing any injury them.

8.0 Closure

8.01 Closing the uterine incision :Closure of incision can be done in situ or after exteriorization.

8.02 Uterine closure can be done in one or two layers ensuring adequate approximation.

8.03 Peritoneum need not be sutured as it reduces operating time, reduced need for postoperative analgesia, is associated with quicker return of bowel activity and decreased formation of adhesions.

8.04 Closure of the abdomen

a) Rectus muscle : gentle approximation with interrupted chromic catgut or polyglactin is done

b) Rectus sheath – it is a most important structure for integrity of the abdomen. Use of delayed or non absorbable suture is recommended.

c) Vertical incisions should be closed with non-absorbable suture material in single layer.

d) Subcutaneous tissue: Routine closure is not advocated except when fat is more than 2 cm. Routine use of superficial drains not recommended as no reduction of wound infection or hematoma has been found

e) Skin – Any absorbable or unabsorbable subcuticular suture/ staples / or vertical mattress can be used as per need.Transverse incisions as compared to vertical incisions allows meticulous care for skin closure and enhanced cosmetic appearance.

8.05 Measures to minimise blood loss and prevent Postpartum hemorrhage.

Oxytocin (IM/IV diluted) is the recommended uterotonic drug for the prevention of PPH in cesarean section. Oxytocin 10 units IM is recommended.If administered intravenously it should be given in a dose of 5 -10 units diluted to 5ml over 1minutes. Intravenous infusion of oxytocin 10-20 U in 500ml (150ml/hour) is an acceptable alternative.Cord traction is the recommended method for removal of the placenta in cesarean section.

8.06 Checking count :Sponges are counted by hand before and after surgeries. Three separate counts are recommended:First when instruments and sponges are first unpackaged and set up,second before the beginning of the surgical procedure and third as closure begins.(annexure 1 and 2)

9.00 Post operative care

9.01. Use oxytocin, ergometrine, prostaglandins (PGF2□ or misoprostol) to prevent or control post partum hemorrhage

9.02. Patient is kept nil by mouth for 4-6 hours only. Early ambulation should be done and oral fluids should be started as early as possible.

9.03 Patient should be offered analgesia whenever she demands it.

9.04.IV fluids are given and soft diet is advised once bowel sounds appear and/or patient feels hungry.

9.05. Monitor –Pulse, blood pressure, respiratory rate ½ hrly for first 2 hours and hourly thereafter for 6 hours if these are normal. Woman should be catheterized to monitor urinary out put.

9.06 Breast feeding is initiated as early possible. Emphasis must be given on correct breast feeding practices.

10.0 Hospital stay and discharge-

10.1 Hospital stay is increased after LSCS. On an average patient is in wards for 3 to 4 days

10.2 Wound is checked prior to discharge

10.3 If pulse, BP, temperature, lochia and breast examination are normal , patient can be discharged.

10.4 The hospital record should be updated and patient should be handed over detail record of the procedure, post op period and follow up instructions.

11.0 Follow up

11.1 Routine follow up is advised after a week for examining the wound and assess breast feeding.

11.2 Follow up visit should include discussion about contraception.

12 Training and audit

12.1 Operator should be well trained in carrying out the procedure.

12.1 Audit is a must to ensure quality and monitoring outcomes. It should include rate of CS, indications of CS, complications of procedure. Audit should be done for a surgeon as well as entire unit.

Annexure 1: Pre op checklist: do & confirm

(When the patient is on op table before starting anesthesia)

- Name, diagnosis, procedure
- Pre op instructions followed – NBM, medicines to be taken (inhalers, Betnesol, anti hypertensive, thyroid medicine. Misoprost), medicines to be withheld (low dose Aspirin, Hypoglycemics, Heparin)
- Pre op investigations done & checked
- Pre op check by Physician, Anesthetist done
- Consent checked– informed/high risk/tubal ligation/NICU/stem cell
- X match & blood group – blood (component) kept ready
- Risk factors social/medical/allergies considered
- Pre op antibiotics given
- Usual drugs which are contraindicated considered -NSAIDS/Scoline/Prostaglandins/ Methylergometrine
- Additional equipment kept ready - drains, epidural catheter
- Trolley check. Mop/ instrument count done
- Baby preparation done – resuscitation equipment / warmer / baby label/ baby record/ neonatologist / NICU call

Annexure 2 : Post Op checklist for doctors

(Before the patient is shifted out of the OT)

- Sponge & instrument count checked
- Pulse/BP/PPH/O2 saturation
- Urine output/Colour
- Lab sent – HPE/cord blood
- Baby – warmer/label
- Anesthetist permission for shifting the patient out of the OT