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Obstetric Protocols for Labor Ward Management



An Official Publication of (Department of Obstetrics & Gynecology) Maulana Azad Medical College (MAMC) New Delhi

2nd Edition

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Foreword
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CONTENTS

Section 1: Normal and Abnormal Labor

1. **Normal Labor, Episiotomy and Perineal Tears** 3–18
   Sangeeta Gupta

2. **Trial of Labor** 19–21
   Sangeeta Gupta

3. **Prolonged and Obstructed Labor** 22–29
   Sangeeta Gupta

4. **Fetal Distress, Cord Prolapse and Meconium Stained Liquor** 30–37
   YM Mala

5. **Shoulder Dystocia** 38–47
   Devender Kumar

Section 2: Malpresentations and Multiple Pregnancy

6. **Breech Presentation** 51–60
   Reva Tripathi, Sarita Shah

7. **Transverse Lie, Face and Brow Presentation** 61–66
   Reva Tripathi, Sarita Shah

8. **Twin Pregnancy** 67–73
   Asmita Muthal Rathore, Krishna Agarwal

Section 3: Pregnancy Complications

9. **Hypertension in Pregnancy** 77–93
   Asmita Muthal Rathore, Latika Sahu

10.	**Previous Cesarean Section** *Vijay Zutshi, Saumya Prasad*	**94–99**
11.	**Preterm Labor** *Swaraj Batra, Poonam Sachdeva*	**100–104**
12.	**Prelabor Rupture of Membranes** *Swaraj Batra, Poonam Sachdeva*	**105–109**
13.	**Pregnancy Beyond Expected Date of Delivery** *Ashok Kumar, Mona Dahiya, Bidhisha Singha*	**110–115**
14.	**Pregnancy After Assisted Reproductive Technologies** *Renu Tanwar*	**116–118**
15.	**Antepartum Hemorrhage and Morbidly Adherent Placenta** *Raksha Arora, Chandan Dubey*	**119–127**
16.	**Acute Blood Loss in Obstetrics** *Anjali Tempe, Pushpa Mishra*	**128–137**

Section 4: Pregnancy with Medical Disorders

17.	**Heart Disease** *Gauri Gandhi, Chetna Arvind Sethi*	**141–151**
18.	**Anemia** *Gauri Gandhi, Poonam Kashyap*	**152–155**
19.	**Diabetes Mellitus** *Gauri Gandhi, Nalini Bala*	**156–165**
20.	**Hepatic Dysfunction** *Sangeeta Bhasin*	**166–179**
21.	**HIV Infection** *Shakun Tyagi*	**180–185**

Section 5: Postpartum Complications

22. Primary Postpartum Hemorrhage **189–201**
Sudha Prasad, Bidhisha Singha

23. Postpartum Collapse **202–219**
Vijay Zutshi, Saumya Prasad

Section 6: Interventions

24. Induction of Labor **223–232**
Ashok Kumar, Mona Dahiya, Bidhisha Singha

25. Version **233–238**
Reva Tripathi, Sarita Shah

26. Operative Vaginal Delivery **239–248**
Usha Manaktala, Poonam Sachdeva

27. Lower Segment Cesarean Section **249–259**
Deepti Goswami

28. Thromboprophylaxis and Anticoagulants in the Peripartum Period **260–270**
Madhavi M Gupta

29. Postpartum Contraception **271–280**
Rachna Sharma, Jyoti Sachdeva

Section 7: Neonatal Care

30. Newborn Care in Delivery Room **283–291**
S Ramji

Appendices

Appendix 1—Interpretation of Intrapartum CTG 293–295
YM Mala

Appendix 2—Neonatal Survival at MAMC, Delhi 296–297
S Ramji

Appendix 3—Important Medicolegal Points 298–300
Asmita Muthal Rathore

Appendix 4—Risk Management 301–305
Deepti Goswami

Index *307–313*

CHAPTER 4

Fetal Distress, Cord Prolapse and Meconium Stained Liquor

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DEFINITION

Fetal distress is the condition in which, fetal physiology is altered due to hypoxia so as to make death or permanent neurological injury a probability within a relatively short period of time.

RISK FACTORS FOR FETAL DISTRESS IN LABOR

1. Maternal
   - Pre-eclampsia, eclampsia
   - Antepartum hemorrhage (APH)
   - Medical disorders of mother causing placental insufficiency
   - Induced labor
   - Prolonged PROM
   - Prolonged labor.
2. Fetal
   - Fetal growth restriction (FGR)
   - Prematurity/Postmaturity
   - Oligohydramnios
   - Cord prolapse
   - Multiple pregnancy.
3. Iatrogenic
   - Epidural anesthesia
   - Uterine hyperstimulation

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- Drugs like morphine, phenobarbital, diazepam, magnesium sulfate and propranolol.

INDICATORS OF FETAL DISTRESS DURING LABOR

1. Abnormal fetal heart pattern
2. Presence of significant meconium.

This is defined as dark green or black amniotic fluid that is thick or tenacious, or any meconium-stained amniotic fluid containing lumps of meconium.

Earlier meconium in amniotic fluid was considered as a potential warning of fetal asphyxia. Although it represents a normal physiological process, it becomes hazardous when fetal acidemia intervenes.

DIAGNOSIS OF FETAL DISTRESS

Fetal Heart Monitoring

1. Intermittent Auscultation of FHR

Indicated for low-risk women in established spontaneous labor. Count fetal heart rate (FHR) for 60 seconds, especially during and following contraction and palpate maternal pulse simultaneously. Any accelerations or decelerations if heard to be noted

Frequency of auscultation in low-risk pregnancy
Active first stage: Every 30 minutes
Second stage: Every 5 minutes

- A cardiotocograph (CTG) tracing of 20 minutes should be taken on all patients who are monitored by intermittent auscultation every 6 hours as per the logistics and the patient condition.
- Switch over to electronic fetal heart rate monitoring in case of any abnormality detected on intermittent auscultation

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and record tracing for 20 minutes at least. You may return to intermittent auscultation if no non-reassuring or abnormal feature seen on the trace.

Criteria for distress on intermittent auscultation

- Fetal bradycardia: FHR <100 beats per minute (bpm) persisting for 3 minutes and occurring in more than 50% of contractions (exclude congenital heart disease).
- Irregular fetal heart and late deceleration (FHR <100 bpm lasting for >60 seconds following contraction).
- Persistent fetal tachycardia >180/min in between contractions, in the absence of maternal tachycardia.

Suspicious pattern

- FHR: 100–110/min or 160–180/min
- Early deceleration, i.e. postcontraction drop recovering within 30 to 60 seconds.

2. Electronic Fetal Heart Rate Monitoring

Continuous cardiotocography is preferred in presence of one of the following factor:

- Severe hypertension (160/110 mm Hg or above)
- Oxytocin use
- The presence of significant meconium
- Fresh vaginal bleeding that develops in labor
- Suspected chorioamnionitis or sepsis or a temperature of 38°C or above
- Previous cesarean.
- Fetal growth restriction
- Any situation where chances of fetal distress is high.

Settings on CTG machines should be standardized so that:

- Paper speed is set to 1 cm/min
- Sensitivity displays are set to 20 bpm
- FHR range displays of 50–210 are used.

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INTERPRETATION OF CTG

All 4 features should be assessed and trace should be categorized according to FIGO 2015 guidelines (Table 4.1) into normal, suspicious or pathological.

1. Baseline FHR
2. Baseline variability
3. Presence and type of deceleration (if any)-decelerations should be present with more than 50% of contractions
4. Accelerations-presence is reassuring and generally indicates the well being of the baby but absence of acceleration with otherwise normal CTG is of uncertain significance

Management should be decided considering all other factors (like parity, obstetric history, progress of labor, etc.) and not based only on CTG findings. The cause of fetal distress should be looked into and conservative measures should be initiated immediately.

MANAGEMENT

Nonreassuring FHR

Review—Progress of labor, need for modifying dose of oxytocin
—Continue careful monitoring

- Place mother in left lateral position
- Administer oxygen by mask
- Discontinue oxytocin
- Expand intravascular volume and improve hydration by giving IV fluids (Ringer Lactate).
- Vaginal examination to rule out prolapsed cord or impending delivery.

Review after 30 minutes and—

If above measures fail/pathological trace persist, delivery to be expedited.

Mode of delivery decided depending on cervical dilatation and station of the presenting part.

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Table 4.1: CTG classification (2015 revised FIGO guidelines on intrapartum fetal monitoring)

	Normal	***Suspicious***	***Pathological***
Baseline	110–160 bpm	Lacking at least one characteristic of normality, but with no pathological features	<100 bpm
			Reduced variability Increased variability Sinusoidal pattern
Variability	5–25 bpm		Repetitive* late or prolonged decelerations for >30 minutes (or >20 minutes if reduced variability) Deceleration >5 minutes
Decelerations	No repetitive* decelerations		
Inter-pretation	**No hypoxia/ acidosis**	**Low probability of hypoxia/acidosis**	**High probability of hypoxia/acidosis**
Clinical management	No intervention necessary to improve fetal oxygenation state	Action to correct reversible causes if identified, close monitoring or adjunctive methods	Immediate action to correct reversible causes, adjunctive methods, or if this is not possible expedite delivery. In acute situations immediate delivery should be accomplished

*Decelerations are repetitive when associated with >50% contractions.
Absence of accelerations in labor is of uncertain significance.

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- If the patient fulfils criteria for operative vaginal delivery, forceps/vacuum application can be done
- If delivery not in sight—Lower segment cesarean section (LSCS).

FETAL SCALP STIMULATION TEST

If digital fetal scalp stimulation leads to an acceleration in fetal heart rate, this should be regarded as a reassuring feature. Take this into account when reviewing the whole clinical picture.

CORD PROLAPSE

Prevention

1. Avoid ARM with floating head
2. Controlled ARM in case of hydramnios.

Management

1. Stop oxytocin.
2. Push back cord into the vagina and keep inside with moist gauge pack.
3. Minimum handling of the cord.
4. Measures to decrease cord compression while the patient is shifted for LSCS.
   - Vaginal retrograde pressure applied to the presenting part
   - Raise foot end of bed (Trendelenburg position)
   - Lateral decubitus (Sim's position).

   Alternatively

   Fill bladder with 400–700 mL saline
   - Elevates fetal head from pelvic brim decreasing cord compression
   - Tocolytic effect.
5. Oxygen administration to mother

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6. Expedite delivery
   - Forceps/vacuum
   - LSCS.

Before LSCS, check FHS and confirm by USG in case of doubt. (FHR should be more than 80 bpm).

MECONIUM STAINED LIQUOR

Meconium stained liquor is a poor predictor of fetal acidosis: It can be *light/thin* (light yellow or green) or *heavy/thick* (dark green or black and thick and tenacious).

Significant Meconium

This is defined as dark green or black amniotic fluid that is thick or tenacious, or any meconium-stained amniotic fluid containing lumps of meconium.

Management

Thick Meconium with

- FHR abnormalities
- Other risk factors for uteroplacental insufficiency (i.e. IUGR, severe PIH, prev CS)
- BOH
  - Immediate delivery—LSCS or operative vaginal delivery (OVD) if suitable.

Meconium with normal FHR pattern and no other high-risk factor—Amnioinfusion may be considered after taking informed consent.

Amnioinfusion

- Pass Ryle's tube/Foley's catheter above presenting part.
- Infuse Ringer's lactate/normal saline:
  - 500 mL—over 30 minutes at the rate of 15 mL/min then, 500 mL—at the rate of 3 mL [30 drops]/min.

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- Maximum amount of infusion—1 liter
- Continue careful FHR monitoring

Contraindications to amnioinfusion

- Chorioamnionitis
- Multiple pregnancy
- APH
- Maternal cardiac disease
- Previous CS
- Dilation >7 cm.

Neonatal care in cases of fetal distress and meconium stained liquor: Presence of pediatrician skilled in neonatal resuscitation is mandatory. (See protocol: Care of newborn in delivery room).

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Salient Features

- Fully revised and updated
- Includes six new chapters totaling 30
- Protocols for labor ward management of common obstetric problems
- Prepared and peer reviewed by senior and experienced faculty members of Maulana Azad Medical College (MAMC) and associated Lok Nayak Hospital (LNH), New Delhi
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