DESIRED OUTCOME/OBJECTIVE

The aim of intrapartum fetal surveillance is to prevent adverse perinatal outcomes arising from fetal metabolic acidosis/cerebral hypoxia related to labour.

ALERT

All staff that perform or participate in fetal surveillance must have an understanding of the relevant maternal and fetal pathophysiology and demonstrate competence in the interpretation of fetal surveillance. Annual competency requirements must be met by all staff who participate in fetal surveillance.

DEFINITIONS

Cardiotocograph (CTG): a means of recording the fetal heartbeat and uterine contractions during pregnancy and labour

Fetal Scalp Electrode (FSE): is a device placed just under the skin on the presenting part of the fetus whilst in-utero to assess the fetal heart rate (FHR) pattern when external monitoring is unable to be used or when the signal quality is poor.

INDICATIONS

The following indications for FSE application include:
- External monitoring is unable to be used (e.g. Maternal obesity)
- The membranes are ruptured
- The cervix should be a minimum or 2-3cm dilated
- Inability to obtain a continuous trace externally
- The signal quality of external monitoring is poor

CONTRAINDICATIONS

Routine application of a FSE should be avoided. Contraindications include:
- Maternal blood borne diseases
- Maternal blood clotting risk factors
- Known neonatal clotting disorders
- Infants < 34 weeks gestation
ISSUES TO CONSIDER

Perinatal morbidity associated with FSE use includes:

- Eyelid laceration
- Scalp abscess and ulceration
- Neonatal osteomyelitis
- Subarachnoid penetration
- Acute meningoencephalitis

Risks for potential infection include:

- Prolonged monitoring
- Vacuum extraction
- Maternal infection

EQUIPMENT

- Sterile fetal scalp electrode
- Sterile gloves
- Sterile water based lubricant
- Cardiotocographic (CTG) monitor
- Fetal scalp electrode connection

PROCEDURE

Preparation

1. Obtain consent from the woman and document verbal consent has been obtained
2. Ensure the woman’s bladder is empty
3. Establish the membranes are ruptured prior to application of the FSE
4. Establish there are no risk factors prior to application

Applying the FSE

1. Perform a vaginal examination to confirm:
   - The membranes are ruptured
   - The identification of the presenting part
   - There is no cord presentation
   - The position for application is not over the fontanel’s, face or genitalia
2. Using an aseptic technique, remove the FSE from its package leaving the wires locked in the retention notch at the top of the FSE.
3. Insert the FSE until the presenting part is contacted and ensure the guide tube end is held flat against the presenting part.
4. Pull the grip out from the outer guide tube enough to release the protection tap from the guide tube and then push the grip back in until the spiral tip contacts the presenting part.
5. Rotate the handle grip clockwise (approx 1 full turn) until milk resistance indicates full attachment. **(DO NOT over rotate)**
6. Release the wires from the retention notch and grasp the guide tube and slide both the guide and drive tubes off the wires.
7. Connect the FSE to the leg adaptor, monitor cable and CTG inlet
8. **DO NOT** unscrub until the electrode is attached to the CTG, is working correctly and recording

Removing the FSE
1. Pull the FSE connector out of the leg adapter. Grasp the electric wires as close as possible to the fetal presenting part, turning them counterclockwise until the spiral tip is free from the fetal skin. **DO NOT** pull the spiral tip from the fetal skin. **DO NOT** pull the FSE wires apart.

2. Inspect the spiral tip to ensure that it is still attached to the FSE hub. If the tip has separated from the hub and remains embedded in the presenting part remove it using an aseptic technique.

3. **REMEMBER** The FSE must be removed prior to performing a caesarean section.

**Post Procedure**

1. Document the indication and use of the FSE in the maternal progress notes
2. Notify the Paediatric team if there are any abnormalities of the insertion site on the baby after delivery (e.g. lacerations or infections)
3. Advise the mother to examine the scalp or buttocks of her baby frequently until healed and to report any abnormalities
4. Dispose of single use items and clean monitor cable.

**RELATED DOCUMENTS**

**Internal**

CPG Fetal Surveillance - Intrapartum

**REFERENCES**


Phillips Medical Systems Fetal Spiral Electrode Product Information Ref 989803137631