# Fetal Spiral Electrode (FSE)

## Self Learning Module

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## OBJECTIVES

1) You will be able to determine when an fetal spiral electrode would be beneficial
2) You will be able to list the risks/complications to the procedure
3) You will be able to insert a fetal spiral electrode
4) You will be able to trouble shoot when a fetal spiral electrode is not working correctly

## DEFINITIONS

FSE – Fetal spiral electrode (sometimes known as 'scalp' electrode)

SE – Spiral (or Scalp) electrode, slang for fetal spiral electrode

"Scalp Clip" – Slang for FSE

## INTRODUCTION

A fetal spiral electrode is used to record the electrical impulses of the fetal heart. It can be attached to the fetus once the cervix is open 2-3 cms and the membranes are ruptured. It may be attached to the fetal head or buttocks. Position of the fetus MUST be known prior to insertion. FSE can provide data on which to base appropriate interventions.

## INDICATIONS

- When the FHR is unable to be traced externally

OR

- When clarification of the FHR pattern is needed

## REQUIREMENTS

- PCP order
- Ruptured membranes
- Cervical dilation of at least 2-3 cms
- Trained staff

## CONTRAINDICATIONS

- Placenta Previa
- Undiagnosed vaginal bleeding
- Face or unknown presentation
- Maternal HIV
- Active genital herpes
- Maternal hepatitis B or C

- Intrauterine infection (i.e. chorioamnionitis)
- Prematurity less than 34 weeks
- Fetal bleeding disorders

## EQUIPMENT

- Sterile gloves
- Sterile water based lubricant
- Spiral electrode
- Reusable leg plate adapter cable
- Attachment electrode (disposable)
- Electronic fetal monitor

## INSERTION of FSE

- Obtain verbal informed consent
- Explain the procedure to the pt
- Perform hand hygiene
- Open packages
- Put on sterile gloves using aseptic technique
- Perform a vaginal exam –
    - Determine the presenting part – vertex or breech
        - If Vertex
            - Feel for firm bone
            - Determine the presence of the suture lines and fontanels
            - Avoid the suture lines/fontanels when applying the SE
        - If Breech
            - Avoid placement of the SE on the genitals
- Ensure electrode is not extended beyond the guide tube as not to damage the vaginal canal/cervix upon insertion
- Place the guide between the two examining fingers
- Firmly press the guide against the presenting part at a 90 degree angle
- Maintaining pressure on the presenting part, turn the electrode clockwise about 1 ½ times or until resistance is met
- Remove the wire from the protection tab
- Withdraw the guide tube slightly and give a light tug to ensure the scalp electrode is attached
- Withdraw the guide tube completely
- Attach the leg plate to the pt's inner thigh & attach the FSE to the leg plate
- Plug the cable into the monitor
- Ensure the FHR is tracing
- Document the placement of the FSE

## REMOVAL OF THE FSE

- Detach the electrode from the leg plate
- Turn the electrode counter clockwise until it detaches from the fetus.
- Document the removal and if the FSE tip is intact

## DOCUMENTATION:

- Document in the IPN the rational for apply the FSE as well as how the patient tolerated the procedure.
- Removal of the FSE must also be documented as well as the condition of the fetal scalp after delivery

## TROUBLE SHOOTING:

- FSE are sometimes hard to place on an infant with a full head of hair as the hair entangles the electrode – ensure firm placement against the scalp prior to rotating the guide tube

## COMPLICATIONS:

- Hemorrhage
- Abruption
- Uterine perforation
- Maternal fetal infection
- Fetal lacerations that become abscessed/ulcerated
- Subarachnoid penetration (rare)

## PREVENTION OF COMPLICATIONS:

- Use of aseptic technique
- Ensuring proper placement of the FSE away from suture lines and fontanels. If unsure of position of the suture lines or fontanels, wait for a PCP to insert the FSE

## MONITORING

- Monitor the FHR as per guidelines
- Ensure leg plate/cable is firmly attached to the patient's leg, especially after ambulation or when the patient very restless in bed

Bibliography

Government of Western Australia Department of Health (2014, September). Clinical Guidelines Obstetrics and Midwifery. Intrapartum Care: Intrapartum fetal heart rate monitoring: Fetal scalp electrode application. Accessed on May 11, 2015 from

More$^{OB}$– Taking Care of life. Management of labour & Fetal health Surveillance in labour. Accessed on April 28, 2015 from www.moreob.com.

Sarasota Memorial Hospital (2008, June). Nursing procedure: Fetal spiral electrode placement. Accessed on May11, 2015 from www.home.smh.com

Awhonn Position Statement . Amniotomy and placement of internal fetal spiral electrode through intact membranes. JOGNN, 38 740; 2009. DOI:10.1111/j.1552-6909.2009.01076.x