I. PURPOSE

To provide guidelines for application of the fetal electrode.

II. POLICY

It is the policy of UCSF Benioff Children's Hospital that the fetal spiral electrode (FSE) may be applied by provider or certified nurse midwife (CNM) under the following conditions:

1. Ruptured membranes.
2. A cervix which is > 2 cm dilated.

The FSE is an internal means of detecting fetal heart rate (FHR) giving the most direct FHR information (the fetal ECG).

III. PROCEDURE

A. CRITICAL POINTS

1. Indications:
   a. The FSE may be used in patients who are difficult to monitor externally due to obesity, fetal position, etc., and in patients with variant FHR patterns who cannot be adequately monitored externally.
   b. Contraindications
      i. Fetus with a known or suspected blood dyscrasia, i.e. ITP, hemophilia.
      ii. Fetus suspected of having an immune deficiency
      iii. Placenta/vasa previa
      iv. Visible or prodromal maternal genital herpes lesions or HIV positive
      v. Unable to determine the presenting part (FSE should not be applied to the fetal face, fontanels or genitalia)
   c. Relative Contraindications (not recommended but may be acceptable if a clear benefit to the fetus or mother can be established):
      i. Extreme prematurity
      ii. Presence of maternal infection such as hepatitis B or C, Group B strep, syphilis or gonorrhea
2. Risk of Procedure & Other Information
   a. The FSE tip is designed to penetrate the epidermis of the fetus so trauma, hemorrhage or infection can occur
   b. Strict adherence to aseptic technique should be used
   c. The FSE should be removed prior to performing any electrosurgical procedures

B. STEP-BY-STEP PROCEDURE

1. Explain the procedure to patient/family
2. Gather equipment:
   a. Internal fetal monitor (IFM) cable with leg grounding pad
   b. Y-site attachment for electronic fetal monitor (with green and grey ends)
   c. Sterile FSE

3. Plug in the IFM cable and attach the leg grounding pad to patient's thigh or abdomen with a pre-gelled cardiac monitoring electrode.
4. Place the patient in the modified lithotomy position, maintaining privacy and providing for the patient's comfort.
5. Assist provider/CNM with sterile placement of FSE.
6. The FSE should not be applied to facial parts, fontanels, or to the cervix. If there is any presentation other than vertex, discuss with attending provider before proceeding.
7. Placement involves:
    a. Remove the end of the electrode wires from between the drive and guide tube. This facilitates removal of the guide after attachment.
    b. Pull the drive tube and electrode back 2.5 cm's inside the guide tube to prevent laceration of the vaginal wall during insertion.
    c. Advance the guide tube between the examining fingers until it reaches the presenting part.
    d. Hold the guide tube so that it is at a right angle to, and pressing against, the presenting part.
    e. Grasp the guide tube grip and advance the drive tube until the electrode reaches the presenting part.
    f. Maintain pressure against the presenting part and rotate the drive tube clockwise until resistance is met. Attachment is indicated by resistance to further rotation and recoil of the drive tube, which usually occurs after one complete rotation.
    g. Release the locking device on the drive tube by slipping the wires out of the slotted drive tube handle.
    h. Carefully slide the guide and drive tubes off the electrode wires.
    i. Remove the examining hand and take off sterile gloves.
    j. Insert the safety cap into the leg grounding pad. A "double click" will be felt when the safety cap is fully inserted.
    k. Check the fetal monitor tracing to ensure accurate operation of electrode
8. Once the FSE is applied, the bedside nurse will:
    a. Record the time of the application in appropriate flowsheet.
    b. Notify the provider/CNM if the following occur:
        i. The electrode is not successfully applied.
        ii. The FHR demonstrates irregular or abnormal patterns after the electrode has been applied.
    c. Reposition the patient for maximum comfort and optimal uterine blood flow.
9. The recommended method to remove the FSE from the presenting part is to steadily rotate the FSE counter clockwise until he FSE is completely free from the presenting part.

IV. RESPONSIBILITY

For questions regarding this policy contact The Birth Center Clinical Nurse Specialist.

V. HISTORY OF THE POLICY

Author: E. Harrington RNC, M.P. Thiet MD, Molly Killion RN CNS
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VI. REFERNCES

Kendall Fetal Spiral Electrode Single Helix Package Instructions

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