FETAL SPIRAL ELECTRODE (FECG)

POLICY

A Physician or Registered Midwife applies the fetal spiral electrode.

Applicability: Application, use and removal of fetal spiral electrodes (FECG) occurs in the Birthing area of the Acute Perinatal Program.

PROCEDURE

The fetal spiral electrode provides instantaneous and continuous recording of clear detail of the fetal heart rate and pattern.

1.1 FECG Application Criteria - EFM Quality of Signal Acquisition

When continuous electronic fetal monitoring is indicated but the external recording is inadequate in obtaining accurate data for interpretation for the following conditions a FECG may be applied.

<table>
<thead>
<tr>
<th>Associations or potential causes</th>
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<tbody>
<tr>
<td>Maternal</td>
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<tr>
<td>High BMI (abdominal adipose tissue)</td>
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<tr>
<td>Polyhydramnios</td>
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<tr>
<td>Oligohydramnios</td>
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<tr>
<td>Detecting maternal pulse</td>
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<tr>
<td>Maternal movement</td>
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</table>

Table 13, S34 SOGC

1.2 Contraindications of FECG Application

The fetal spiral electrode is contraindicated for the following conditions including:

- Active Herpes Simplex Virus
- Hepatitis B Surface Antigen positive
- Hepatitis C RNA positive mother
- HIV positive mother, known or suspected

Note: Individual clinical situations may require evaluation of the risks of transmission of infection to fetus versus the need to determine fetal well-being or the need for emergency Cesarean section when there is a poor quality external tracing.

Registered Nurse (RN)

1.3 Gather Supplies

- Attachment Pad – FCB2000
- Electronic Fetal Monitor with FECG capability
- FECG leg plate connecting cable
- Fetal spiral electrode (FSE) or (FECG - fetal electrocardiogram)
- Sterile lubricant, gloves
- Wedge

1.4 Clinical Actions

Assist the woman into a comfortable position:

- Ensure the equipment is working properly
- If external monitor is in use, reposition to obtain a clear continuous signal.
- Anticipate need for internal monitoring, if unable to maintain technically adequate tracing despite interventions using external monitoring.
- With internal EFM, confirm presence of fetal heart sounds by auscultation and note the fetal heart rate.
- Confirm uterine activity pattern and uterine resting tone by abdominal palpation. 

(Table 13, S34 SOGC)
1.5 Preparation for Application of Electrode
Assist the woman into the wedged position. Perform a vaginal examination to identify the following:
- The membranes are ruptured
- The cervix is sufficiently dilated
- The presenting part is low enough to allow placement of the electrode
- The position of the fetal head or breech
Open the sterile electrode package for the physician/ midwife.

1.6 Electrode Application and Placement

**Physician or Registered Midwife**

<table>
<thead>
<tr>
<th>Directions</th>
<th>Note</th>
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</thead>
<tbody>
<tr>
<td>Remove the spiral electrode from package, leaving the electrode wires locked in the handle notch.</td>
<td>See package Directions For Use.</td>
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<tr>
<td>Gently form the guide tube to the desired angle. Retract the electrode tip into the guide tube approximately 2.5 centimetres.</td>
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<tr>
<td>With the woman in dorsal lithotomy, place perform a vaginal examination and clearly identify the fetal presenting part</td>
<td></td>
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<tr>
<td>Place the electrode on the occipital or parietal bones on the fetal head, or buttocks of the breech if palpable.</td>
<td>The electrode is placed only on the left or right parietal bone, the occipital bone, or the left or right buttock. Avoid the fontanels, suture lines, face, genitalia and rectum.</td>
</tr>
<tr>
<td>Maintain pressure against the fetal presenting part with the guide and drive tube</td>
<td>Avoid any areas that have a lot of hair</td>
</tr>
<tr>
<td>Rotate the handle clockwise only until resistance is felt, a maximum 1½ turn.</td>
<td>The tip should attach with less than one full turn. Check the electrode is not attached to maternal tissue.</td>
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<tr>
<td>Release the wires from the handle and then straighten the wires. Slide the guide and drive tubes off the electrode wires.</td>
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**Registered Nurse**

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<tr>
<td>Insert the electrode wires into the connector cable (two clicks).</td>
<td>Snap the connector cable to the attachment pad.</td>
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<tr>
<td>Place attachment pad on the dry skin, preferably on the woman’s lower abdomen. Plug the connector cable into fetal monitor.</td>
<td>Check the fetal monitor screen and ensure the connection is operating.</td>
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</table>

1.7 Assessment
For monitoring and interpretation of data see Intrapartum Electronic Fetal Heart Monitoring
1.8 **Removal of a Fetal Electrode**

- **Cesarean Birth** - Remove the fetal electrode just prior to the skin preparation or immediately prior to delivery.
- **Vaginal Birth** - Remove prior to delivery, when possible.

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<td>Disconnect the electrode wires from the connecting cable.</td>
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<tr>
<td>Grasp the wire and then turn it counterclockwise.</td>
<td>Making a loop in the wire may provide a place to grasp.</td>
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</tbody>
</table>
| Gently pull back on the wire. | If the electrode does not come off, try:
                   Unravel the wires manually just in front of the safety cap, spreading the wire apart.
                   Gently pull back on the wire as the wire untwists from the presenting part.
                   If you feel resistance, carefully pull **slightly harder.** |
| Inspect the spiral wire carefully. Discard. | Make sure it is intact. |

1.8 **After the Birth**

Assess the point of insertion on the newborn. Cleanse the site(s) with a sterile sponge.

When the newborn is transferred:
- Inform the receiving RN an electrode was used
- Identify the point(s) of insertion

**DOCUMENTATION**

- Fetal Monitoring Label
- Fetal Monitoring Tracing
- Labour and Birth Summary Record
- Labour Partogram
- Monitoring Delivery Label

**REFERENCES NEED UPDATE**


