INTERDISCIPLINARY CLINICAL MANUAL
Policy and Procedure

<table>
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<tr>
<th>TITLE:</th>
<th>Removal of Temporary Epicardial Pacing Wires</th>
<th>NUMBER:</th>
<th>CL-CC-005</th>
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<tr>
<td>Sponsor:</td>
<td>Heart Health and Critical Care</td>
<td>Page:</td>
<td>1 of 6</td>
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<td>Approved by:</td>
<td>Director – Heart Health and Critical Care</td>
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<td>Applies To:</td>
<td>NSHA – Central Zone – Nurse Practitioners in Cardiac Surgery</td>
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This is a part of the Collaborative Practice Agreement for Nurse Practitioners in Cardiac Surgery that requires assessment of competency prior to performing.

POLICY

1. Removal of the temporary epicardial pacing wires is the responsibility of the nurse practitioners or physicians.
   1.1. Removal of temporary epicardial pacing wires (EPWs) is a part of the Collaborative Practice Agreement for Nurse Practitioners in cardiac surgery that requires successful completion of the self-directed learning module, and the Proficiency Checklist with demonstration and return demonstration.

GUIDING PRINCIPLES AND VALUES

1. Removal of Temporary Epicardial Pacing Wires policy has been developed to facilitate complete recovery from open heart surgery; to reduce the risk of infection associated with the presence of externalized wires; and to minimize the risk of potentially serious complications associated with removal of EPWs.

2. Temporary epicardial pacing wires (EPWs) are placed on the epicardium at the end of open heart surgery and are externalized through the skin to permit emergency and therapeutic pacing during the early, hospitalized period of recovery following open heart surgery. These wires are removed prior to patient discharge.
2.1. When both atrial and ventricular EPWs are present, the atrial wire is removed first.

**PROCEDURE**

**Equipment**
- Sterile occlusive dressing
- Suture removal kit
- Antiseptic swab (suggested 2% Chlorhexidine Gluconate with 70% Isopropyl Alcohol)
- Non sterile gloves
- Emergency resuscitation equipment available on unit.

1. Review the patient’s health record to confirm:
   1.1. Stable cardiac rhythm for the last 24 hours, no indication for pacing
   1.2. INR less than 1.8; if on intravenous heparin, ensure that the infusion has been off for 4 hours prior to removal of wire
   1.3. four to seven days post op
   1.4. at least one day before discharge, and a minimum 4 hours prior to discharge to allow for monitoring of the patient post EPW removal.

2. If at all possible, arrange for the removal of EPW during morning rounds when the OR is available.

   *Rationale - Cardiac Tamponade is a life threatening risk associated with removal of EPWs.*

   2.1. If removal is required outside of this designated time frame, notify the cardiac anesthetist on call (CV-1) through locating or by calling directly through to the operating rooms (473-4514).

3. Ensure that emergency equipment is available on the nursing unit.

4. Ensure that the patient has IV access.

5. Ensure that the patient has continuous ECG monitoring for up to 4 hours post removal.

6. Notify the RN or LPN of the planned EPW removal and request a set of baseline vitals including blood pressure, heart rate, respiratory rate, and oxygen saturation.

   6.1. Determine patency of intravenous catheter.

7. Explain the procedure to the patient and family. Advise the patient that brief discomfort may occur while the wire is withdrawn.

8. Instruct the patient to:
   8.1. remain in bed during the procedure and for approximately one hour following
8.2. report symptoms of chest pain, shortness of breath, weakness or palpitations, or any other new symptoms
9. Assist the patient to a supine position in the bed or at least 30 degrees if unable to tolerate supine.
10. Follow principles of aseptic technique for removal of EPW; wash hands and don non sterile gloves.
11. Expose the wire(s); identify the atrial and/or ventricular wire(s).
12. Cleanse each of the EPW sites with an antiseptic swab for at least a 3 inch area around each of the exit sites.
13. Remove sutures (always pull the atrial wires first); the wire should exit from the skin in one site only.
   13.1. If the wire is looped through the skin, cut the wire if necessary, to avoid pulling contaminated wire back through the skin.
      13.1.1. Grasp the proximal portion of the wire (the part attached to the heart) firmly prior to cutting the wire and remove that portion of the wire first.
   13.2. Apply a forcep to the proximal wire as necessary to prevent retraction below the surface of the skin.
14. Remove the wire using a smooth continuous pulling motion until release from the epicardium is felt. Continue gentle traction until the wire is completely removed.
   14.1. Never jerk or apply excessive force to the wire. If tension is felt wait 2 mins and repeat the attempt. If the second attempt is unsuccessful then notify the surgeon.
   14.2. Remove the distal portion of wire if necessary.
15. Apply pressure to the site to stop any superficial bleeding.
16. Apply a sterile occlusive dressing over the epicardial exit site.
17. Inspect the removed wire for intactness and presence of tissue fragments. If tissue fragments present then notify physician immediately.
18. Remove the second wire - if present - using the above technique.
19. Discard equipment and perform hand hygiene.
20. Monitor the patient immediately for signs and symptoms of tamponade, chest pain, arrhythmia or hemodynamic instability.
21. The RN or LPN provide ongoing monitoring post EPW removal as follow:
   21.1. Monitor vital signs at intervals of 5 minutes, 30 minutes and 2 hours post EPW removal.
   21.2. Assess the patient at the above intervals for signs and symptoms of cardiac tamponade (e.g. dyspnea, diaphoresis, altered level of
consciousness, jugular venous distension, pulsus paradoxus), chest pain, arrhythmia or hemodynamic instability. Notify physician or nurse practitioner immediately.

21.3. Reinforce teaching to the patient including remaining in bed for approximately one hour following removal and reporting symptoms of chest pain, shortness of breath, weakness or palpitations, or any other new symptoms

22. Document the patient and family education, removal of EPWs, patient’s tolerance to the procedure, site assessment, and any unexpected outcomes and interventions.

23. If the patient becomes unstable:

23.1. Notify the CV-1 anesthetist on call and the cardiac surgeon on call.

23.2. Make arrangements for immediate transfer to the operating room.

REFERENCES


RELATED DOCUMENTS

Policies
CC 10-075  Temporary Cardiac Pacing: Assisting a Physician with Initiating Care and Monitoring of Patients (PEL)
CC 80-021  Central Venous Access Device (CVAD) Umbrella Policy

Appendices
Appendix A - Definitions

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Version History
APPENDIX A - DEFINITIONS

Epicardial wires: Temporary pacing wires that are surgically placed directly on the right atrium and/or right ventricle. Wires placed on the right atrium are brought out through the skin on the right of the sternum. Those on the right ventricle are brought out on the left of the sternum.

Cardiac Tamponade: A significant compression of the heart by accumulating pericardial content. It is often associated with tachycardia, tachypnea, decrease cardiac output, hypotension, narrow pulse pressure and pulsus paradoxus.

Version History
(To Be Completed by the Policy Office)

<table>
<thead>
<tr>
<th>Major Revisions (e.g. Standard 4 year review)</th>
<th>Minor Revisions (e.g. spelling correction, wording changes, etc.)</th>
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<tr>
<td>December, 2015 – Standard review and transition to NSHA policy</td>
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