

Southern Illinois Regional EMS System

II-27 APPLICATION OF EXTERNAL PACEMAKER

Policy:

- To establish guidelines for the application prehospital of an external pacemaker in the adult patient (18 years of age or older) who presents with bradysystolic cardiopulmonary arrest or Atropine refractory symptomatic bradycardia.

Equipment:

- Gloves and other PPE as needed
- Monitor-Defibrillator-Pacemaker unit

Procedure:

- Don PPE
- Assess patient for instability:
 - Systolic BP of 90 or below and heart rate of 50 or below with:
 - Decreased level of consciousness due to bradycardia
 - Chest pain of suspected myocardial origin
- Apply pacemaker:
 - Anterior-Posterior placement is preferred:
 - Place negative electrode on left anterior chest halfway between the xiphoid process and the left nipple with the upper edge of the electrode below the nipple line
 - Place the positive electrode on the left posterior chest beneath the scapula and lateral to the spine
 - Apex-Base placement:
 - Per manufacturer's recommendations
 - One on the right upper chest
 - One on lower left chest, mid axillary line
 - This position should only be used if A-P positioning is not possible

Pacing Procedure:

- Attach ECG monitor to patient:
 - Patient must remain monitored during entire pacing procedure
- Connect pacing pads and cable to ECG monitor
- Position pacing electrodes as above
- Push "Pace" button
- Set pacing rate to 70 beats per minute
- Observe monitor:
 - "Pacing marker" (·) should appear on each QRS or QRS complex
 - Activate pacemaker by pushing the "start/Stop" button
 - The indicator will flash and a positive pacing spike will be seen with each paced beat
- Slowly increase current (mA)
- Watch monitor for electrical capture of pacing stimulus
 - Assess pulse and BP for evidence of mechanical capture
- The recorder will document the selected pacing parameters
- Each pacing stimulus will be marked with an arrow on the ECG paper

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- If the intrinsic heart rate exceeds the pacing heart rate:
 - The pacemaker will sense the cardiac activity and not discharge
- Musculoskeletal contractions may be observed while pacing
 - This may be somewhat uncomfortable for some conscious patients
 - Discomfort may be minimized by using the lowest current which produces capture and by varying the position of the pacing electrodes
 - In some cases, sedation may be needed

Documentation:

- Who performed procedure?
- PPE and equipment used
- Which placement used
- Rhythm strips before and after application of pacemaker
- Any side effects
- Time of application