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HACKETTSTOWN REGIONAL MEDICAL CENTER

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OR
(Scope)

TITLE: ELECTROCAUTERY: SURGICAL PATIENTS WITH IMPLANTED PACEMAKERS

PURPOSE: To outline the procedure for the use of electrocautery on patients with implanted pacemakers.

SUPPORTIVE DATA: Electrocautery can interfere with a pacemaker's ability to sense, causing inhibition or reversion to an asynchronous mode. Bipolar electrocautery may minimize interference. Cautery should be used in short bursts, less than one second apart to minimize the hemodynamic effects of inhibition. **In any case, electrocautery should not be used within six inches of the implanted pulse generator to prevent damage to circuiting.**

CONTENT: **PROCEDURE STEPS:**

A. Intraoperative Concerns and Precautions

1.) Do not perform electrosurgery within six inches of the pulse generator.
2.) Utilize bipolar equipment whenever possible.
3.) If monopolar equipment must be used, place the grounding pad as far away from the pacemaker as possible.
   a.) The grounding pad should be placed so that current flowing between the electrosurgical site and ground plate will not intersect the pacing system.
   b.) Please note position of ground pad on the OR sheet and indicate type of cautery used.
4.) Use the minimum electrosurgical power settings required.
5.) Use short bursts (preferably less than one second in duration) spaced more than 5 seconds apart. If electrosurgery is causing inhibition of the pacemaker a longer time between bursts will minimize hemodynamic effect.
6.) If the patient can tolerate asynchronous pacing, the pacemaker mode can be changed to either V00 or A00. In the case of a non-programmable pacemaker, simply place a magnet over the 1PG. Do not place a magnet over a programmable pulse generator rather program the pacemaker to asynchronous operation prior to surgery. Asynchronous operation eliminates the potential for reversion or inhibition due to oversensing.
7.) Always monitor pacemaker patients during electrosurgery. If because of interference the ECG tracing is not clear, the patient's pulse generator should be monitored manually or by some other means. Such as ear or finger plethosgraphy, doppler pulse detection or arterial pressure display.
8.) Emergency pacing equipment as well as an appropriate programmer should be readily available.
9.) Verify function of 1PG after procedure. Remember to reprogram out of V00/A00 modes if that was done prior the procedure.

References:

1. Implanted Cardiac Pacemakers & Defibrillators in Anesthetics Practice by S. Senthuran, bya.oujournals.org/cqi/content/full/88/5/627.
2. Electrocautery and Pacemakers: Management of the Paced Patient Subject to Electrocautery, P.A. Levine, G.J. Baladey, H.L. Lazar
3. Pacemakers & Surgery – Marc Rozner www.usyd.edu.au/anaes/lectures/ppm_rozner/ppm_rozner.html-22K-