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Owner:	*Anne Eerkes: Mgr Operating Room Unit*
Policy Area:	*Standardized Procedures*
References:	
Applicability:	*WA - Kadlec Regional Medical Center*

Electrosurgical Cautery Use: Monopolar, Megadyne Pad & Bipolar, 30.30.01

Department Type: Policy, Guideline

PURPOSE:

To provide guidelines for safe use of electrosurgical units (ESU) to include Monopolar/bipolar and Megadyne technology. This technology is also referred to as "cautery." This policy will address general principles associated with Monopolar current, bipolar current and use of the Megadyne pad.

SUPPORTIVE INFORMATION:

ESU, often called a "Bovie," is a basic piece of equipment in the operating room arena delivering electric current to cauterize tissue and prevent excessive bleeding. The technology presents as Monopolar, bipolar, or tissue melding, uses multiple types of machines for different procedures, and delivers different results. Each technology has specific accessories and supplies; some reusable, such as the Megadyne pad, but most are disposable. Regardless of the technology, severe and devastating injury may occur.

Orientation and competency must include differentiating between the various uses of electric current and the associated accessories/disposable, knowledge of troubleshooting equipment/problem solving, and using the technology safely. Use of this technology must start with assessment of the patient's skin/physical condition, understanding the use for the procedure planned, and having a plan to avoid hazards for both the patient and personnel in the case.

POLICY:

ESUs will have routine preventative maintenance performed by Clinical Engineering in accordance with hospital policy and/or manufacturer's recommendation. As with all electrical equipment, prior to use, the user will inspect cords and generator for broken/frayed components and, if found, remove from service until remedied. A replacement will be found and put into use.

Orientation to all electrical equipment is mandatory prior to use.

MONOPOLAR TECHNOLOGY:

- This technology emits a current from the generator to the tip of the instrument and to the tissue it touches.

The current then travels through the tissue and strives to find a route back through the dispersive pad. The current travels back to the generator. The technology within the generator "senses" the amount of current returning and compares that to what was delivered.

- Most ESUs have a safeguard system intended to stop operation if the amount of returning current is not within a standard range. At Kadlec, the ValleyLab system uses a "REM" system and will stop operating if the returning current does not correlate to the current being delivered.
- To provide the optimal environment for current to be collected through the pad, it must be placed properly and in good working condition.
- Prior to connecting the pad's cord to the generator, turn generator on to allow self-diagnosis and alarm testing cycle.
  Connect pad to generator. Apply dispersive pad and provide adequate pressure to adhere edges to skin.

  Confirm requested settings with surgeon during time out using the lowest possible settings.

- The disposable dispersive (cautery) pad must be placed with the following in mind:
  - Select a well vascularized, convex area close to the surgical site to apply the pad.
  - Avoid scar tissue, bony prominences, adipose tissue, and areas where fluid may pool.
  - Avoid sites distal to implantable devices, as this may increase impedance of electrical current.
  - Ensure pad is moist, not dried out, or past expiration date
  - Apply smoothly to location, avoiding wrinkles/folds in pad
- Allow time for flammable prepping solutions to dry before draping or activating the ESU unit.
- Due to potential electrical shock to the patient, a patient with an automatic implantable cardiac defibrillator (AICD) should have the AICD device deactivated before ESU use. In addition, a defibrillator should be immediately available with defibrillator /monitor pads in place on the patient and continuous EKG monitoring provided.
- When procedure completed, disconnect pad from generator. Remove pad gently, observing for skin condition, and discard.
- Any special notations will be included in handoff to next provider and documentation.

NOTE: Use of this type of monopolar generator, requires use of a disposable pad. The current travels from the generator and finds the easiest path to a conducting pad or circumstance. The pad provides this. However, other pads also can be alternative pathways for current such as: EKG pads, any metal touching the patient, or other conductive items. This increases the potential for a concentrated amount of current to cause a burn.

MEGADYNE GEL PAD – MONOPOLAR TECHNOLOGY without a dispersive pad:

- When using the Megadyne cautery Gel pad, place it on the OR bed and cover with a draw sheet.
- The patient's weight will provide adequate contact for safe use.

NOTE: IF PATIENT IS ***UNDER*** 25 POUNDS, a disposable dispersive pad must be used, NOT Megadyne pad.

BIPOLAR TECHNOLOGY:

Bipolar technology is different than monopolar in several ways.

- The current travels from the generator through the cord to the hand piece on the sterile field, across the connection made by the tips of the hand piece and back to the generator.
- Grounding pads are not needed because the current travels through the instrument.
- Hemostasis is more precise, resulting in less fulguration of the tissue.
- Activation of the hand piece is by foot pedal, or hand activation, and may be routed through forcep-like

instrumentation, such as a Kleppinger.

NOTE: It is important to document "bipolar use." If omitted, the assumption is a dispersive pad was used and no documentation will be available because one is not used.

DOCUMENTATION:

The following will be documented, as applicable:

- Generator KRMC number
- Megadyne gel pad number
- Megadyne Cord number
- If bipolar technology used
- If dispersive pad used, location and skin condition prior to and following pad application
- ESU settings in watts. If modified during case, record new settings

Attachments

No Attachments

Approval Signatures

Approver	Date
Kirk Harper: VP, Nursing & CNO	06/2019
Heather Shipman: Executive Assistant	06/2019
Loris Cook: Manager, Operating Room Unit	05/2019

Applicability

WA - Kadlec Regional Medical Center