What to Teach a New Technician: Part V

BY RICK SCHULTZ

This fifth article in the New Technician Training series addresses the inspection and repair of Obstetrics/Gynecology (OB/GYN) and Ear, Nose and Throat (ENT) instruments.

OB/GYN instruments

The Graves speculum is the most common variety of speculum used by practitioners. The blades of the Graves speculum are wider than the blades of the Pederson speculum (Figure A). For example, the large Graves speculum is 1 1⁄2" wide while the large Pederson speculum is only 1" wide.

Graves

Graves speculums tend to be wider: ¾" (1.9 cm) x 3" (7.6 cm), 1⅜" (3.5 cm) x 4" (10.2 cm), 1½" (3.8 cm) x 4½" (11.4 cm)

Pederson

Pederson speculums tend to be narrow. Width: ½" (1.3 cm) x 3" (7.6 cm), ⅞" (2.2 cm) x 4" (10.2 cm), 1" (2.5 cm) x 4¾" (12.1 cm), extra narrow ⅝" (1.6 cm) x 4" (10.2 cm)

Figure A

Speculums are sometimes coated in a matte black finish. This coating (Figure B), applied by a process called ebonization, eliminates the reflection on the surface of the instruments caused by the use of laser during a procedure. This black coating is designed to absorb the laser rather than reflect it, and it prevents patient injury.

Figure B

NOTE: The ebonized coating can become damaged through metal-to-metal contact. Care must be taken when storing and assembling surgical trays. Placing the instrument on a silicon mat can be helpful in preventing damage. Inspection of the black surface for chipping, especially on the edges, after every use is critical.

In other cases, OB/GYN instruments are insulated in pink or blue (Figure C). This type of insulated coating is non-conductive and is required for electrosurgical procedures, such as LEEP (Loop Electrosurgical Excision Procedure) and LLETZ (Large Loop Excision of the Transformation Zone).

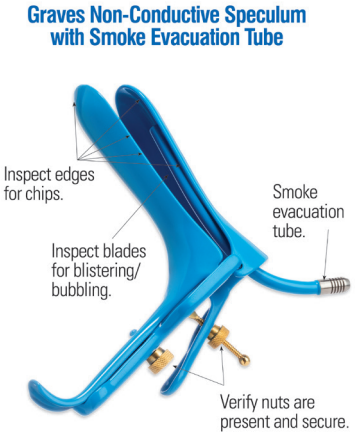

Figure C

This coating can become damaged (chips, nicks and cracks) and must be inspected before and after use. If the insulation is bubbled, torn, missing or chipped (Figure D), the instrument must be sent out for repair. Failure to repair damaged insulation can result in thermal burning of a patient.

Figure D

Figure E

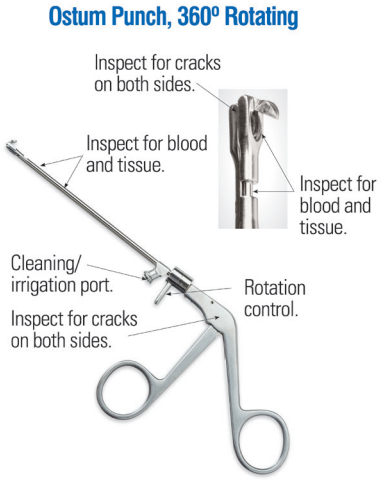

Figure F

When cleaning, Sterile Processing technicians may find that an insulated speculum has been stained by an iodine-based solution during use. This stain causes no harm.

Some insulated speculums, such as the Graves, have tubes for smoke evacuation during laser and electrosurgical procedures. It is important to always inspect for contaminants before and after use and brush out the evacuation tube during decontamination.

It is essential to pay close attention to chrome- or silver-plated instruments. Some instruments, such as Sims and Simpson uterine sounds, are silver-plated and made to be malleable. With use, the silver plating may begin to tarnish and discolor. If this happens, the instrument must be replaced.

As these instruments age, the chrome plating may also become compromised and begin to flake away from the surface of the instrument; this creates an infection risk if the flaking occurs during a surgery. If an instrument shows signs of flaking, it must be removed from service immediately and replaced with a stainless-steel instrument.

A chrome-plated speculum (or any other chrome- or silver-plated instrument) should be replaced when the instrument does not pass the paper test during inspection (Figure E). After visually inspecting the instrument for missing/flaking chrome, rub the instrument (while wearing gloves) over a sheet of paper. If flakes are present on the paper after rubbing, immediately remove the instrument from service and replace.

What do the numbers indicate on dilator sets?

It is important to note that the number on dilator sets indicate size/diameter. If there are two numbers, each number is the size of each end of a double-ended dilator. For Hank uterine dilators and Pratt uterine dilators, the double-ended numbers are French scale. For Hegar uterine dilators, single-ended numbers are in millimeters.

ENT instruments

Common surgical instruments used in ENT procedures include the following:

- Speculums for viewing the nasal passages and ear canal;
- Punches for punching holes in bones and other tissues during (such as for biopsy);
- Rasps for filing or shaping bone;
- Forceps for obtaining tissue samples for biopsy, grafting cartilage, and in tonsil esophagoscopic and laryngoscopic procedures and more;
- Scissors;
- Curettes for scraping or debriding biological tissue or debris (e.g., in a biopsy, excision, or cleaning procedure); and
- Suction tubes with stylets for removing tissue or bone that becomes lodged in the suction tube during the surgical procedure.

Some ENT rasps have gold handles to call attention to their tungsten carbide filing surfaces, which are more durable and courser than stainless steel. As with all tungsten carbide inserts, the inserts can be replaced without replacing the entire instrument. Fomon and Maltz rasps are common gold-handled rasps, which contain tungsten carbide files.

When inspecting a punch before or after a surgical procedure, pay special attention to the jaw area. Ensure all screws are present and that there are no cracks near the pin/hinged area, which is particularly prone to cracks (Figure F), as well as along the cutting edge. These

cracks are not repairable. If cracks along the jaw are found, the instrument must be replaced.

Punches should be sharpened on a regular rotation. For example, sharpening every three months is a good practice; however, sharpening should be based on usage and surgeon satisfaction.

Forceps are used in nearly every surgical procedure. They should be carefully inspected before and after each use. When inspecting forceps, pay close attention to the teeth and any serrations. These are places where blood and tissue are likely to remain after use. If, upon inspection, a crack is noticed, this damage is not repairable. Cracks are most likely to occur at the base of the forcep where the two arms meet. A cracked instrument should be immediately removed from service and replaced.

Curettes come in sharp and blunt configurations and require sharpening approximately once a year. During inspection, it is important to check for dents, burrs or imperfections on the cutting surface.

Generally common forceps, scissors and suction tubes are also used during ENT procedures. Forceps and scissors are used in nearly every surgical procedure. Suction devices are also routinely needed to evacuate liquids such as blood and/or solutions that are used to irrigate wounds and cavities. A cleaning brush will also assist in cleaning. (Figure G)

All suction tubes are equipped with stylets, which are used during the surgical procedure to remove any tissue or bone that becomes lodged in the suction tube during the surgical procedure. Stylets should never be used for cleaning after the procedure is complete. A surgical instrument cleaning brush may be used during the decontamination process to assist in removing blood and tissue. The brush must be the proper diameter and longer than the instrument, so it exits the distal tip. (Figure H)

During inspection, ensure that the suction tube itself is not bent or dented. Dents can diminish the flow of fluids through the tube, causing delays in surgery. Although these defects can be repaired, they are also easily avoided. Dents likely occur when heavy instruments are placed on top of the suction tube; therefore, placing heavy instruments on top of suction tubes should be avoided. Use care when placing the instrument in the tray and ensure it is not sticking out of the tray.

House Suction Tube With Irrigation

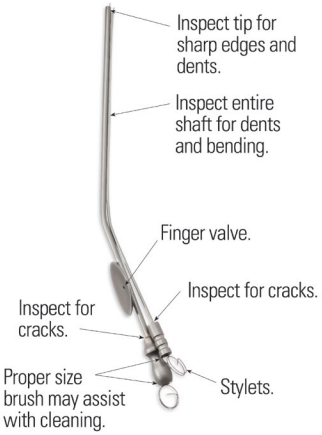

Figure G

Frazier Suction Tube, Standard

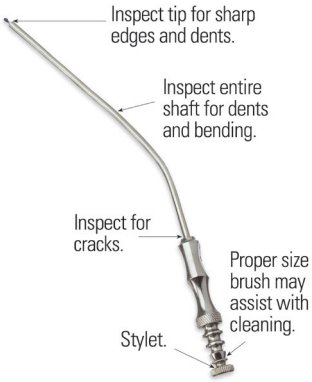

Figure H

Q We seem to get a lot of complaints about the condition of our instruments in our C-section trays. Why is this?

A C-section trays have a high frequency of use, with a lot of cutting and sewing; therefore, the needle holders wear our faster and the scissors dull quicker. My recommendation is to put your C-section trays on a four-times-per-year repair rotation, especially all scissors and needle holders in the tray.

RICK SCHULTZ, the Instrument Whisperer™, is an author, inventor and lecturer, and the retired Chief Executive Officer of Spectrum Surgical Instruments Corp. He served as contributing editor of IAHCSMM's Central Service Technical Manual (Fifth, Sixth, Seventh, Eighth Editions). Rick authored the textbooks *Inspecting Surgical Instruments: An Illustrated Guide and The World of Surgical Instruments: The Definitive Inspection Textbook*, which was released in June 2018. Schultz was named IAHCSMM's Educator of the Year in 2002, and in 2006, was named American Hospital Association Educator of the Year. In 2007, he was named by Healthcare Purchasing News as one of the 30 Most Influential People in Healthcare Sterile Processing. Schultz currently provides educational lectures to Central Service professionals at IAHCSMM's annual conferences and conducts operating room personnel lectures across the country.