What to Teach a New Technician: Part II

BY RICK SCHULTZ

The Instrument Whisperer column in the May/June issue of *PROCESS* addressed the importance of process in the hiring, training and retention of quality Sterile Processing (SP) professionals. It also specifically addressed the importance of instrument inspection and the new technician's need to know the basic instrument groups. That article focused on inspection of scissors, needle holders and hemostats. This article focuses on the following three instrument groups:

- Retractors;
- Suction devices; and
- Scalpel handles

Note: Once the right person has been hired, it is beneficial to have them observe four or five surgeries of various specialties, so they can see the use of the products they will be putting into trays.

Retractors

Retractors play a crucial role in surgery. As with all surgical instruments, it is important to learn the most commonly-used retractors, their main differences and how to properly inspect them.

There are several broad categories of retractors:

- **Hand-held retractors –** A hand-held (manual) retractor must be held in position by a surgical assistant, resident, physician assistant and/or the surgeon during the procedure. This type of retractor is used to move tissue, muscle and organs aside in order to expose the surgical site. It is important for the technician to know the proper names and how to measure (See Figure A) to ensure the correct retractor is placed into the surgical set.

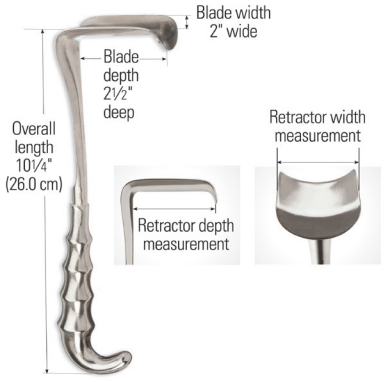

Figure A

Two common types of hand-held retractors are the Kelly retractor (Figure B) and the Richardson retractor (Figure C).

The difference between these retractors is the depth and width of the blades. A Kelly retractor is always larger than a Richardson retractor. Kelly retractors have larger blades (for example, 3" wide x 3 1/2" deep compared to the largest Richardson retractor blade of 1 5⁄8" wide x 2 1⁄2" deep. Some hand-held retractors, such as the Auvard and Richardson, can be plated. While inspecting each instrument for bioburden, it is also necessary to determine whether the finish of these instruments has been damaged.

Kelly Retractor

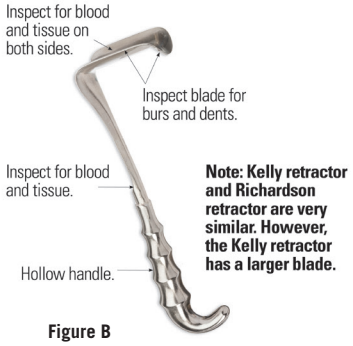

Figure B

Richardson Retractor, Loop Handle

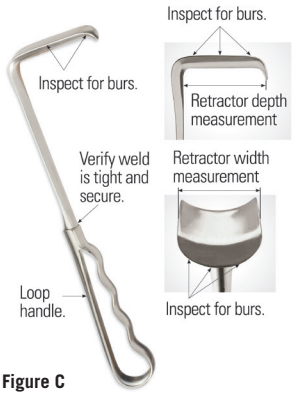

Figure C

A plated finish will wear out over time. It is important to visually inspect the finish for flaking by using use gloved hands to massage the instrument over a white piece of paper. If specks of the finish fall onto the paper, remove the instrument from service and replace.

- **Self-retaining retractors –** These retractors have a ratchet-type mechanism to hold the instrument in the retracted position (this means they stay open on their own). A common example is the Weitlaner retractor. (Figure D)

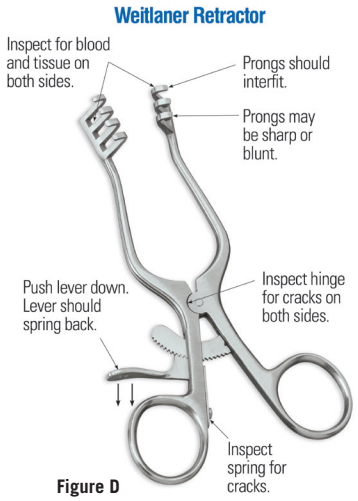

Figure D

When inspecting self-retaining retractors, it is very important to test the ratchet mechanism to ensure it is functioning properly. This is achieved by pushing the lever down and allowing it to spring back into the locking position.

Another popular self-retaining abdominal retractor is the Balfour retractor (Photo E). This retractor system may have a set of blades for the retractor arms, and various sizes of the center blade. It is very important that the new technician verifies that all the correct components are in the surgical tray.

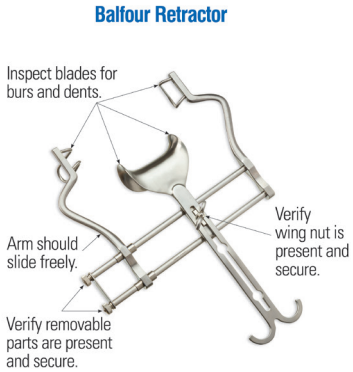

Figure E

- **Malleable retractors -** A malleable retractor can be bent and shaped, so it can perform the proper retraction. The metal is soft, allowing it to continually be angled/bent for the surgical application. Many SP departments will straighten out the malleable retractor for tray assembly. Senn retractors and Volkman retractors are commonly-used retractors. The Senn retractor always has three prongs; however, the Volkman retractor can be two-prong, three-prong, four-prong, five-prong or six-prong. The count sheet should indicate the number of prongs, and whether the prongs are sharp or blunt.

Suction

Suction tubes are used to remove debris and fluids from surgical sites. They are often measured in the French scale (FR; also called the French gauge system). FR is commonly used to measure the outside diameter of suction tubes. For example, Baron suction tubes are available in 3, 5 and 7 French. New technicians should become familiar with the commonly-used suction tubes, including Baron, House, Frazier and Poole. (Figure F)

Some suction tubes, such as the Frazier, are equipped with stylets. The stylet is designed to help dislodge bone chips during surgery. The stylet should never be used as a cleaning device. For cleaning, a proper sized brush may be used.

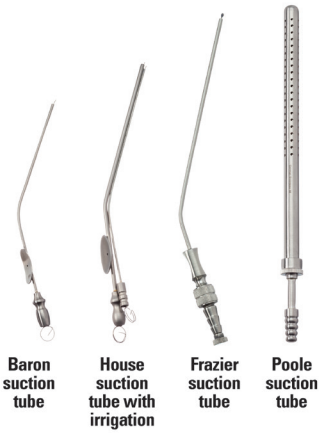

Figure F

House suction tubes are available with irrigation; therefore, they have two channels with stylets. The irrigation channel is used to flush the surgical site while the suction channel removes blood and fluids.

When cleaning and inspecting suction tubes, it is important to inspect for sharp edges and dents, especially at the distal tip. Many times, the tip will become damaged by other instruments. Very small dents may be acceptable if they do not affect the flow of fluid through the instrument; however, if the dent is severe and a cleaning brush is not able to pass through, the instrument must be repaired or replaced.

Yankauer suction tubes (Figure G) should be disassembled at the tip for cleaning and inspection. Special attention should be given to the threads, as this is an area where blood and tissue collect. A brush may assist with the cleaning process of the Yankauer. The threads may be cleaned with a nylon brush to remove blood. The brush must be the proper diameter and should be longer than the instrument, so it completely exits the distal tip.

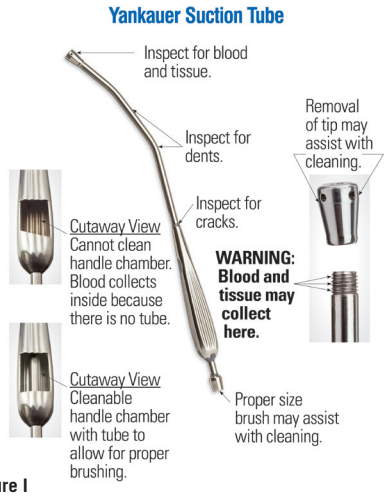

Figure I

Scalpel handles

Scalpel handles are numbered #3, #3 long, #3 angled, #4 and #7. Each handle has designated scalpel blades that exclusively fit the handle. For example:

- Handle #3 holds blades #10, #11, #12, #12b, #15, #15c.
- Handle #4 holds blades #20, #21, #22, #23, #25.
- Handle #7 holds blades ##10, #11, #12, #12b, #15, #15c.

A specialty handle, called a micro-blade handle or beaver handle, holds very fine scalpel blades. For proper cleaning, unscrew the collette (distal tip).

Some knife handles are made of brass. Over time, this metal commonly deteriorates and becomes discolored. Although the brass is covered by nickel plating, the nickel eventually wears off. The recommendation is to simply replace the brass handle with a stainless-steel knife handle. In addition to inspecting the blade for wear, the handles must also be inspected for damage and the presence of blood and tissue, especially in the groove where the blade is inserted.

Watch for Part III in the September/October Instrument Whisperer column, where technician training for tissue and dressing forceps and laparoscopic instruments will be addressed.

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.