In one spot: surgical pathology specimen handling specifics

Valerie Neff Newitt

August 2019—A practical guide that can help labs standardize the handling of a patient’s surgical specimen from harvest to diagnosis is available but too little known, and one of its authors aims to change its hidden treasure status.


“Our main objective was to standardize specimen collection handling. Nothing had ever been done like it before,” says Elizabeth Sheppard, MBA, HT(ASCP), past president of the National Society for Histotechnology and head of global market access at Roche Tissue Diagnostics, Tucson, Ariz. She and M. Elizabeth H. Hammond, MD, first chair of the CAP Center Guideline Committee, submitted the topic for an evidence-based guideline; however, it was determined to be better suited as a practical guide for labs to be developed by the CAP/NSH Histotechnology Committee.

There have always been bits and pieces of published information in different resources,” Sheppard says. “But there had never before been one go-to place for answers to questions like, ‘Where do I find information on preanalytics to meet the CAP accreditation checklist? How does it affect me in the laboratory? What other references are available?’ As a group of subject matter experts, the committee pulled it all together.”

“This is an opportunity to inform labs what they have to do to standardize the process. It tells them how to do it, and that’s been a long time coming.”

The guide is designed as a comprehensive table divided into two parts. Part one addresses specimen collection and handling: patient identification, proper labeling, transport media, completion of requisition, recommendations for tissue collection and handling, accessioning, handling prior to gross examination, and intraoperative consultation. Part two addresses laboratory processes: guidelines, tissue cassette identification, fixation parameters, processing, embedding, microtomy, staining, and cover-slipping.

There are four columns in the document. The first describes the specific topic in the process. The second is a statement of corresponding best practices. The third column shows if and where that practice relates to CAP accreditation checklist requirements, and the fourth column provides references and resources to support the original statement. “It directs the user to where we verified this information,” says Sheppard, who is a former member of the CAP/NSH Histotechnology Committee. Among the references are ISO standards, HIPAA, federal regulations, Clinical and Laboratory Standards Institute documents, and books, “in case anyone wants more information,” she says.

Offering a glimpse into the guide’s utility, Sheppard directs attention to an example under “Collection and Handling: Completion of Requisition” where the guide addresses warm ischemic time. The statement says the procedure date should be indicated on the requisition following standardized format (DD-MM-YYYY) and the
requisition must have a space for the physician who obtained the specimen (or designate) to document the warm ischemic time.

It then goes on to define warm ischemic time as the time measured from the surgeon’s interruption of the blood supply to the tissue/tumor to the excision time of the tissue specimen, and it says information should be available in the laboratory for review or appear on the patient accession, or both.

Johnston

The next column shows that this section pertains to laboratory general checklist requirement GEN.40750—Requisition Elements. The last column contains the references—in this case an ASCP/CAP guideline—that informed the checklist requirement.

“We see this as a best practice guideline that illustrates the checklist requirement, an explanation of how to do what the checklist is asking for, as well as all of the references that have led to that point,” Sheppard says.

In another example, this one pertaining to calculation of total fixation time, the guide says, “The laboratory has the responsibility to calculate and document total time the specimen was kept in fixative for required specimens,” and tells readers that total time should include the following: time the specimen was held in operating room, transport time from remote site to AP lab, time the specimen was kept in fixative while in the lab, time the specimen(s) are kept in the cassettes after grossing, and time in fixative onboard the tissue processor.

“Labs have always questioned what to include in the total time,” Sheppard says. “It’s a great example of how to best meet that requirement.”

She ticks off one topic after another that is similarly discussed, explained, tied to checklist requirements, and referenced. For example, another guide statement considers tissue processing. “There are no checklist requirements that talk about establishing parameters of the paraffin that should be used—the type, melting point, duration of time, rotation,” Sheppard says. “Tissue processing is an overlooked area even in the checklists. These things are all important, especially with molecular tests. For example, you need a low melting-point paraffin because anything higher than a certain temperature degrades RNA. These are the kinds of things laboratories should consider.”

Another statement in the guide addresses slide drying. It provides important parameters of how long the drying time should be and at what temperatures. “Immunohistochemistry and in situ hybridization require a standardized drying time at an optimal temperature. Some molecular tests require that slides not even be dried,” Sheppard says. “These kinds of things can help a lab write or improve its procedure manual, and most importantly help laboratory staff make sure they are doing the right things as questions come up.”

There are also items not associated with checklist requirements but that are “best practices that happen in the laboratory, a consensus based on committee, on review, and on what is going on globally.

“There are little kernels of information throughout this document that allow a lab to get the best specimen and the best diagnosis for the patient,” she says.

The guide began to gel in 2012. “This was a project that was so important, so sorely needed. At first we didn’t know where to start, so we began by tackling preanalytics. And then we didn’t know where to stop—ultimately we ended with staining and coverslipping—because all of it was so important. That’s why the end product is 52
pages,” Sheppard says. The guide first appeared on the CAP website about five years ago.

Jeremy Johnston, HT(ASCP), QIHC, laboratory manager at Northwest Pathology, Bellingham, Wash., is a member of the CAP/NSH Histotechnology Committee and a user and fan of the guide.

“When I worked at another lab we did a study for the Canadian provinces. They sent out one tumor broken into five specimens and sent them to five different labs. And they got back five different answers on diagnosis,” he recalls. “Even if you think you have all the preanalytic factors in place, you probably don’t. Each of those labs did things a little differently, including different ischemic times, and the consequence was different results. It is very troubling, especially for a patient.”

Greater standardization with surgical specimens is better not only for patients but also for those in the laboratory, he says: “Higher confidence and professional satisfaction are two benefits that come to mind.”

Johnston says that while the guide is a thorough and exhaustive resource able to be applied in any lab, it still is not getting into all the right hands. “This information is slowly making its way to lab management, but it needs to be in the hands of techs who are doing hands-on work. It needs to be shared with histology and PA schools to be incorporated into their training. It should be in the OR and in clinics. It needs to be integrated into front-end collaboration between OR surgeons and pathologists.”

Sheppard agrees, and says users should include not only pathologists, histotechnologists, and lab directors but also CAP inspectors. “It can help guide inspectors to fully understand what is meant by a specific checklist requirement. They can use this as a reference tool to make inspections more efficient, thorough, and current.”

Because the checklists are updated yearly, so too is the guide, with the next update set for September after the 2019 edition of the checklists is released. “We will go through the document, and update, add, or subtract from the statements based on new checklist requirements. We will also update references,” Sheppard says.

The guide’s hefty size made it difficult to house. “It sits on our committee website, but the committee would like more visibility and more recognition of its value,” she says. “That’s not to say it hasn’t earned a great reputation among those who know about it. When you talk to subject matter experts about surgical pathology specimens, they reference this guide.” Now, she says, its attributes and availability need to be made more public.

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