Q: Our lab routinely performs saline wet prep on ob/gyn patients and KOH prep. On the saline wet prep, we add two drops to a slide. On one drop, we add 10 percent KOH. We report out bacteria, clue cells, WBCs, yeast, trichs, and epithelial cells. We also do the whiff test for amine odor. The physicians want all these reported when they order the saline wet prep. On the KOH, we report if we see fungal elements. We have no way of heating the slide. Is it necessary? Do we need to report out all cellular elements and amine odor?

Saline wet mounts and potassium hydroxide (KOH) preparations are simple and rapid methods to detect the causative organisms of vaginitis. Determination of organisms and distinguishing the causative agent may prevent more serious infections and ensure appropriate treatment regimens. For KOH preparations, a 10 percent KOH solution is added to the specimen on a slide, which helps to highlight fungal organisms by digesting proteinaceous material such as blood and epithelial cells. Though not necessary for processing, gentle warming does speed the process of “clearing,” whereby the specimen becomes easier to read. Clearing is especially important for preparations of skin, hair, and nails, in which fungal organisms may be difficult to differentiate from tissue.

Typically, heating involves passing the slide over a Bunsen burner three to four times and then leaving it at room temperature for a few minutes. A slide warmer set at 51°C to 54°C may be used to heat the slides for one hour, though this is likely to be too-consuming for practical use. Caution should be exercised with higher concentrations of KOH, which may crystallize if overheated or left for prolonged periods. An alternative to heating the slide is to add dimethyl sulfoxide to the preparation, which may facilitate clearing of the specimen without the need to heat or incubate. For vaginal KOH preps, the slide should be allowed to sit for several minutes to allow for digestion by KOH, if heating is not used. Much information may be gleaned from microscopic examination of saline wet mounts and KOH preparations. A pH test and amine (“whiff”) test may be performed before examination, as a shift in pH to greater than 4.5 may indicate vaginitis. Normal vaginal bacteria (primarily Lactobacillus acidophilus) produce lactic acid that keeps the pH low, which inhibits overgrowth by other bacteria. The amine or “fishy” odor is very suggestive of Trichomonas vaginalis or Gardnerella vaginalis, or both. The lack of normal flora may also suggest the presence of infection. Furthermore, the presence of white and red blood cells, clue cells, yeast, and fungal hyphae may all help in differentiating the causative organism(s) (Table 1).

Table 1. Selected organisms

<table>
<thead>
<tr>
<th>Organism</th>
<th>Appearance</th>
<th>WBCs</th>
<th>Amine odor</th>
<th>Normal flora</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichomonas vaginalis</td>
<td>Motile parasite with flagella</td>
<td>Many</td>
<td>Yes</td>
<td>No</td>
<td>Metronidazole, clotrimazole</td>
</tr>
<tr>
<td>Gardnerella vaginalis</td>
<td>Cocccobacillus, clue cells</td>
<td>Few</td>
<td>No</td>
<td>Yes</td>
<td>Methronidazole</td>
</tr>
<tr>
<td>Candida albicans/yeast</td>
<td>Budding yeast forms, hyphae</td>
<td>Many</td>
<td>No</td>
<td>Yes</td>
<td>Antifungals</td>
</tr>
</tbody>
</table>

If there were previous needle core biopsies, then x-raying the breast, especially after serially sectioning the specimen, would obviously help in identifying the areas of concern. Short of that, serially sectioning and carefully examining each slice grossly is the best way to try to identify areas of concern. Communication with the surgeon or radiologist, or both, would certainly make the search easier. As far as performing “mammography” on a breast specimen, I am unaware of the value of that as you know, mammography depends on proper positioning and compression to identify lesions, and I don’t believe that a surgically removed specimen lends itself to that approach.

Jean Simpson, MD, Department of Pathology Vanderbilt University Medical Center Nashville, TN Member, CAP Immunohistochemistry and Cancer Committees

Dr. Kiechle is medical director of clinical pathology, Memorial Healthcare, Hollywood, Fla. Use the reader service card to submit your inquiries, or address them to Sherrie Rice, CAP TODAY, 325 Waukegan Road, Northfield, IL 60093; srice@cap.org.

Q: We are looking into adding pH eye testing to our facility. Currently we test only vaginal fluid pH, and we use a set of urine controls for our QC material. If we add the eye fluid testing, will we need to add a set of controls that have the same matrix as the eye fluid? The urine controls we use cover the range of the eye fluid.

Fluid pH testing is used in a variety of clinical settings, on different body fluids or sites, and with different expectations. It can be performed by physicians, nurses, medical laboratory scientists, and other health care personnel. In vaginal secretions it can help determine the cause of a vaginosis, and in pregnant patients it may help indicate whether placental membranes have ruptured. In a patient with a possible caustic eye injury or for the gastroscopy tube placement, multiple pH levels may be performed at the bedside to guide treatment or tube placement.

For vaginal secretions and amniotic fluid, pH testing guides a diagnosis and is considered a test. The Centers for Medicare and Medicaid Services has indicated that it considers pH testing in these settings as a waived test although it’s not on the official Food and Drug Administration list of waived tests. For guiding eye irrigation after exposure to caustic fluids or guiding nasal gastric tube placement, some consider pH testing as part of a procedure. It is recommended that laboratory medical directors work with their medical staff and administrators to consistently designate these different uses of fluid pH testing and apply proper procedures for training, proficiency assessment, quality control, proficiency testing, and other elements of good laboratory practice.

References
5. Deborah A. Perry, MD Department of Pathology Children’s Hospital Oman, Inc., Nebr. Chair, CAP Point-of-Care Testing Committee

References

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