

Family physician makes the case for CP consults

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June 2017—He is a family medicine physician who did a residency and is board certified in clinical pathology. And even he asks his clinical pathology colleagues “day in and day out” which test to do and what to do with the results.

To Graham V. Segal, MD, who spoke in February at the Diagnostic Management Team Conference in Galveston, Tex., the need for clinical pathology consultation in primary care couldn’t be clearer, and he shared patient cases to illustrate. “Clinical pathology is a complex field in which clinicians are not well trained. There are way too many clinical lab tests available and no guidance on which tests are appropriate to check for your patient,” said Dr. Segal, an assistant professor of family medicine and of pathology at the McGovern Medical School of the University of Texas Health Science Center at Houston.

Primary care physicians are under pressure to see a lot of patients in little time, he noted. “In inpatient settings, in outpatient settings, they don’t have time to do research on which lab tests to order and how to interpret results.” The consequences: a potential delay in reaching the right diagnosis, inappropriate use of consultation, and wasted health care resources.

In a typical encounter, as Dr. Segal tells it, a patient comes in and asks the primary care physician to refill his medications. He may ask the physician to go through his health maintenance organization forms. “He may ask me to look through the lab report from the famous outside hospital. Then he’ll say, ‘Oh, by the way, I have this joint pain that’s happening and can you treat it?’” That typically occurs at minute 13 of the 15 minutes allotted to each visit. “And I’m thinking, okay, now I have to stop and come up with a differential diagnosis. But time’s up and I have to move on.”

This situation will only get worse, Dr. Segal predicts. “Basically the problem is that medical students are not exposed to a robust pathology curriculum in the new integrated curriculum we’re all starting to see ramp up around the country. Actually the integrated curriculum is good because you want to create specialist physicians in less time. The problem is that a lot of education, especially pathology education, is suffering as a result.” Which makes the case for CP consultation even stronger.



Dr. Segal

To underscore what a primary care physician faces in trying to choose laboratory tests, Dr. Segal showed a screen shot of what he sees in the clinic—a list of available tests for investigating a possible thyroid disorder. (See “Ordering serology,” page 6.) “A patient comes in and I’m worried about a thyroid issue,” Dr. Segal said, “so I type in the word ‘thyroid.’ And this is what comes up. And, again, this is minute 13 of 15.”

A study published in 2014 and sponsored by the CDC documented the challenges primary care physicians face in ordering clinical laboratory tests and interpreting the results (Hickner J, et al. *J Am Board Fam Med*. 2014;27[2]:268–274). Researchers polled physicians, 1,768 of whom responded and reported ordering diagnostic lab tests for an average of 31.4 percent of patient encounters per week. In 14.7 percent of those encounters they reported uncertainty in ordering tests. “Is that an important percentage?” Dr. Segal asked. “To me that’s a decent

number.” In addition, in 8.3 percent of the encounters physicians reported uncertainty in interpreting the tests ordered. “So what they came up with,” Dr. Segal said, “is that, of the 500 million primary care physician visits that happen each year, uncertainty affected approximately 23 million patients. That’s a lot of people, and that’s very serious.”

Dr. Segal presented five examples from his own practice. Case No. 1 was a 46-year-old woman with nonspecific joint pain. Among the possible causes were osteoarthritis, rheumatoid arthritis, fibromyalgia, hypothyroidism, gout, vitamin D deficiency, depression, and other conditions.

Dr. Segal listed the possible laboratory tests: rheumatoid factor, anti-CCP antibody, erythrocyte sedimentation rate, C-reactive protein, antinuclear antibody, hepatitis panel, vitamin D, thyroid-stimulating hormone, uric acid, comprehensive metabolic panel, CBC. “It’s extensive what you need to do,” he said, “and I guarantee you, primary care physicians don’t do all of them.” In this case all tests were negative and the patient didn’t need to see a specialist.

“Let’s say the patient has hepatitis C-induced arthralgia,” Dr. Segal tells CAP TODAY. “We would order rheumatoid factor and similar tests, which wouldn’t show us hepatitis. My argument is that we should have pathologists come up with different panels to help narrow down the diagnoses. You could argue this is overutilization. Based on history and physical exam, you might not order all those tests. In our clinic we might get two of 10 lab tests. On the other hand, when those tests come back negative, we would send the patient to a specialist, which delays diagnosis and entails a repeat workup.” In the end, he says, what might look like overuse could be a way of reducing consumption of health care resources.

In case No. 2, a 29-year-old woman came into the hospital with recurrent spontaneous abortion, leg pain, and shortness of breath. She was found to have a deep vein thrombosis and pulmonary embolism with prolonged partial thromboplastin time. The physicians obtained the following tests: CBC, PT, PTT, mixing study, lupus anticoagulant, ESR, CRP, antithrombin, proteins C and S, antiphospholipid antibodies, factor V Leiden, and prothrombin gene mutation.

“Here again is where a DMT [diagnostic management team] interpretive comment would be extremely helpful,” he said, “because most primary care doctors are not as familiar as a specialist with antiphospholipid syndrome,” which was the patient’s eventual diagnosis.

To complicate matters, many of these tests—antithrombin, proteins C and S—are falsely low in an acute inflammatory state. “So you’re doing the assays at the inappropriate time. You should wait at least six weeks.”

The patient had four consultant physicians evaluate her in the hospital. “Consultation with a clinical pathologist could potentially have reduced the number,” Dr. Segal said.

The screenshot shows a medical software interface with a 'History Builder' tab selected. Below the tab, there are several tabs: 'Problem-based', 'Rx', 'Med Admin', 'Immun', 'Lab', 'Rad', 'Proc', 'Findings', 'FURet', 'Instruct', and 'Supplies'. The 'Lab' tab is active, and a search bar contains the text 'Thyroid'. Below the search bar, there is a list of tests with checkboxes. The tests are organized into two columns. The first column lists tests such as '[H] Thyroid Stimulating Hormone 000 Minutes', '[H] Thyroid Stimulating Hormone 015 Minutes', '[H] Thyroid Stimulating Hormone 030 Minutes', '[H] Thyroid Stimulating Hormone 030 Minutes', '[H] Thyroid Stimulating Hormone 045 Minutes', '[H] Thyroid Stimulating Hormone 060 Minutes', '[H] Thyroid Stimulating Hormone 090 Minutes', '[H] Thyroid Stimulating Hormone 120 Minutes', '[H] Thyroid Stimulating Hormone 150 Minutes', '[H] Thyroid Stimulating Hormone 180 Minutes', '[L] Thyroid Antibodies', '[L] Thyroid AutoAbs Test Group', '[L] Thyroid Cascade Profile', '[L] Thyroid Function Adult', '[L] Thyroid Peroxidase (TPO) Ab', '[L] Thyroid Profile II', '[L] Thyroid Stimulating Hormone* (E)', and '[L] Thyroid Test Group'. The second column lists tests such as '[LH] Thyroid Antibodies', '[Q] THYROID CANCER MONITORING', '[Q] Thyroid FNA Cytomorphology Evaluation', '[Q] Thyroid FNA Cytomorphology with Molecular Ref...', '[Q] THYROID PEROXIDASE AND THYROGLOBULIN ...', '[QL] THYROID PANEL WITH TSH, 3RD GENERATION', '[QLH] THYROID PANEL', '[QLH] THYROID PEROXIDASE ANTIBODIES', and '[QLH] Thyroid Stimulating Immunoglobulins'. On the right side of the interface, there is a keyboard layout with letters A through Z and numbers 1 through 0. At the bottom of the interface, there are buttons for 'OK' and 'Cancel'.

Ordering serology

In case No. 3, a 35-year-old African American woman came in for a right forearm soft tissue mass and underwent a minor excision in the office. The surgical pathology report came back as eccrine spiradenoma. "That certainly was not on my board exam in family medicine," Dr. Segal said. So is it serious? Does this patient need to see a specialist? "And you're not really sure," he said, which is why a pathology consult would be helpful. "An AP pathologist could easily let us know after the diagnosis that this patient does not need to see a specialist." But he's sure that's what happens next in such situations. For malignancies, he said, clinicians are well advised about the next step. Less so for benign diagnoses.

Case No. 4 from the hospital service was a 33-year-old woman admitted for new onset ascites. Workup included a CA 125 level that was positive. "So everybody starts going down this road of 'Oh my gosh, this poor young lady has a malignancy,' which is not unheard of at that age. It's rare, but it's concerning.

"But CA 125 levels in the setting of peritonitis are falsely elevated. Not many people know that," Dr. Segal said. In this case, the patient was scanned for malignancy with no obvious lesion identified. She was taken to the OR for diagnostic laparoscopy. The diagnosis turned out to be pelvic inflammatory disease with a negative workup for sexually transmitted disease. "It turned out she had a gastric sleeve that was eroding into her omentum and causing a reaction," Dr. Segal said. A clinical pathologist's input on false-positive CA 125 levels would be useful in such a situation.

Case No. 5 was a 51-year-old man who came into the hospital for hypercalcemia and neuromuscular weakness. He was dialysis dependent. Multiple consults were obtained. "Again the concern was malignancy," Dr. Segal said. "During his workup for hypercalcemia we ordered an intact PTH, which was elevated."

Parathyroid hormone-related peptide (PTHrP) was ordered; the result was elevated. The patient stayed in the hospital for several days and had CT scans. "At the end of the day we realized that PTHrP is falsely elevated in the setting of end-stage renal disease," Dr. Segal said, telling CAP TODAY that some pathologists assume primary care physicians know this. Another example of how complex the laboratory has become, he added, and where a clinical pathologist's input is essential.

Dr. Segal offered suggestions for improving the situation, which he and colleagues at UTHealth are implementing. One approach is to have the primary care physician obtain a clinical pathology consult in cases of joint pain. "This has been shown to improve outcomes at the HarrisHealth System in Houston," he said (Risin SA, et al. *Ann Clin Lab Sci.* 2015;45[3]:239-247). Clinical pathologists created an algorithm in which the primary care physician could order a test panel. Clinical pathologists interpret the panel and decide whether the patient needs to see a rheumatologist. "Expert opinion reduced unnecessary testing and unnecessary referrals," Dr. Segal said. "Third-party payers for sure would want to see this." (See the July issue of CAP TODAY for more detail on the HarrisHealth System consult service for rheumatologic disease.)

Another pilot project in his department allows clinicians to order a general clinical pathology consult in the electronic medical record. "In our primary care physician group, when you open an EMR, you can order a referral to a dermatologist or a cardiologist but never to a clinical pathologist. So I created a referral to a clinical pathologist for any questions related to the clinical lab. It's a one-click process. We started getting consults from primary care physicians on the outskirts of town who didn't want to send a patient to a specialist. The pathologist put a note in the chart outlining the interpretation of the test, which resolves a lot of angst for the PCP."

"The feedback I've had from my colleagues has been outstanding because they get faced with a lot of difficult cases and they're not sure what to do."

The chair of his department likes the innovation, which was started about nine months ago. "He wants me to expand the consult service to the hospital setting."

Dr. Segal noted one hurdle for the clinical pathology consult service: Some clinicians are hesitant to use it because they feel they don't need laboratory assistance. "They are sitting in the clinic and ordering laboratory tests on healthy people." That is five or six tests they order routinely. Nothing esoteric, and if they do have to do that, it goes to a specialist, but it could be sent to a clinical pathologist instead.

To promote the service, Dr. Segal is visiting outlying clinics to let them know the option exists. "I give a 15-minute presentation. I don't have much time to market it, but that's the approach I'm taking."

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William Check is a writer in Ft. Lauderdale, Fla. The second Diagnostic Management Team Conference will take place Feb. 6-7, 2018 in Galveston, Tex.