Abdominal Pain, Surgery

Diagnosis, treatment of appendicitis in children evolving
by Corey Nason Reese, Correspondent

Appendicitis is the most common disease requiring surgery in children, particularly in the second decade of life. The choice of diagnostic modalities and treatment options, however, can vary with local expertise.

Using ultrasound as the first choice for radiologic diagnosis of appendicitis in children was a primary topic of discussion during a presentation at the AAP National Conference & Exhibition led by Timothy Kane, M.D., FAAP, professor of surgery and pediatrics, George Washington University School of Medicine.

During the session, titled "Appy Hour: A Current Update on Pediatric Appendicitis," pediatricians compared notes on what they experience locally.

"Currently, the American College of Radiology recommends ultrasound over CT for first-line imaging" (Rosen MP, et al. J Am Coll Radiol. 2011;8:749-755), Dr. Kane said. "Many publications indicate that the accuracy of ultrasound approaches 96%-97% and has become the initial test of choice to rule out appendicitis.

"But it's user dependent and the more scans you do, the better you get," he continued. "In our practice, we do almost 500 appys a year, so there are many more ultrasounds of the appendix to look at, so they get really good. For community hospitals, they may be doing 150 a year, and they aren't going to be as good at it."

CT scans are the other routinely ordered radiologic test. Often, they are more readily available than ultrasounds and are performed at most hospitals, said Dr. Kane, a member of the AAP Section on Surgery. CT scans are recommended for patients who are obese, have excessive abdominal rigidity or are uncooperative, or if ultrasound is equivocal.

Parents, however, may push back on CT scans due to radiation exposure to children, use of intravenous (IV) or oral contrast and the high cost of the test.

Depending on diagnosis and acuity, treatment options for acute appendicitis include surgery, a course of antibiotic treatment, drainage of abscess or phlegmon, or delayed or interval appendectomy.

Dr. Kane also discussed the rationale for delaying surgery until the daylight hours.

"If you believe you have appendicitis and antibiotics can be given, you can operate at that time or at a time that is more convenient," Dr. Kane said. "In a study, they looked at patients that had been diagnosed with acute appendicitis, and if they delayed surgery to the morning, there was no change in outcome."

Surgical procedures include the traditional open appendectomy through an incision in the right lower quadrant. More often, a laparoscopic appendectomy is preferred, Dr. Kane said. Conversion to an open appendectomy can be done if needed. "In 2015, not many places would go right to an open appendectomy for a child."

Patients with appendiceal abscess or phlegmon can be managed by nonsurgical antibiotic treatment or interval appendectomy, which involves initial antibiotic treatment and then return for an appendectomy.

"It's really fairly straightforward to take an appendix out - even if it's ruptured and it's in the right lower quadrant," Dr. Kane said. "But if it's surrounded by inflammation - and in smaller kids, too - sometimes drainage is the first course of therapy."
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"And if you think about interval appendectomy, which is a controversial topic, in those kids with appendiceal mass or abscess, bring them back at six weeks. It's relatively easy - one day admission, surgery and discharge the next day," he said.

Non-operative treatment of simple appendicitis is an up-and-coming topic. Dr. Kane referenced a recent Scandinavian study (Di Saverio S, et al. Ann Surg, 2014;260:109-117) examining IV therapy vs. surgery. "You will be hearing about this down the road," he said. "What should be the management of people with simple appendicitis?"

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