

Score Distinguishes Appendicitis in Children

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PALM BEACH, FLA. — A scoring system improved the accuracy of preoperatively differentiating ruptured and acute appendicitis in a study of 248 children.

Without the scoring system, surgeons preoperatively diagnosed ruptured appendicitis with 96% sensitivity but with only 83% specificity. When patients scored a 9 or greater on the scoring system, however, that specificity was increased to 98%.

Dr. Martin L. Blakely, and his colleagues, who developed the scoring system, reported the results at the annual meeting of the Southern Surgical Association.

The capacity to distinguish acute and ruptured appendicitis may gain importance. Historically, both conditions have warranted an urgent appendectomy, however, some studies indicate a rup-

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tured appendicitis may respond better to a protocol of immediate antibiotics and later interval appendectomy, said Dr. Blakely, of the division of pediatric surgery at the University of Tennessee Health Science Center in Memphis.

With multivariate analysis, the researchers compiled a weighted scoring system based on five independent and statistically significant variables available preoperatively. Generalized tenderness was assigned a score of 4 points; abscess on CT scan was 3 points; symptom duration longer than 48 hours was 3 points; a white blood count greater than 19,400 cells/mm³ was 2 points; and fecalith on CT scan was 1 point.

Dr. Blakely along with lead author Dr. Regan F. Williams and their associates prospectively studied 248 children referred over a 9-month period to the University of Tennessee for suspected appendicitis. Mean patient age was 10 years (range, 3 months to 18 years), and 61% of the study subjects were boys.

The researchers compared the surgeons' preoperative diagnosis with the intraoperative findings, the pathology report findings, and the discharge diagnosis. The cohort included 98 children with acute appendicitis, 53 children with ruptured appendicitis, and 97 children who ultimately had no appendicitis.

Of the 53 with a diagnosis of ruptured appendicitis, 18 patients were treated with initial antibiotics and interval appendectomy. A meeting attendee asked if the researchers later confirmed the diagnosis in those given antibiotics. Of the 17 who returned for follow-up, Dr. Blakely replied, "all had intraoperative evidence ... and with the pathology report follow-up, we feel pretty certain they had ruptured appendicitis."

Another attendee raised concerns about exposing children to CT ionizing radiation and asked if the scoring system would still have high specificity and sensitivity without the use of CT imaging.

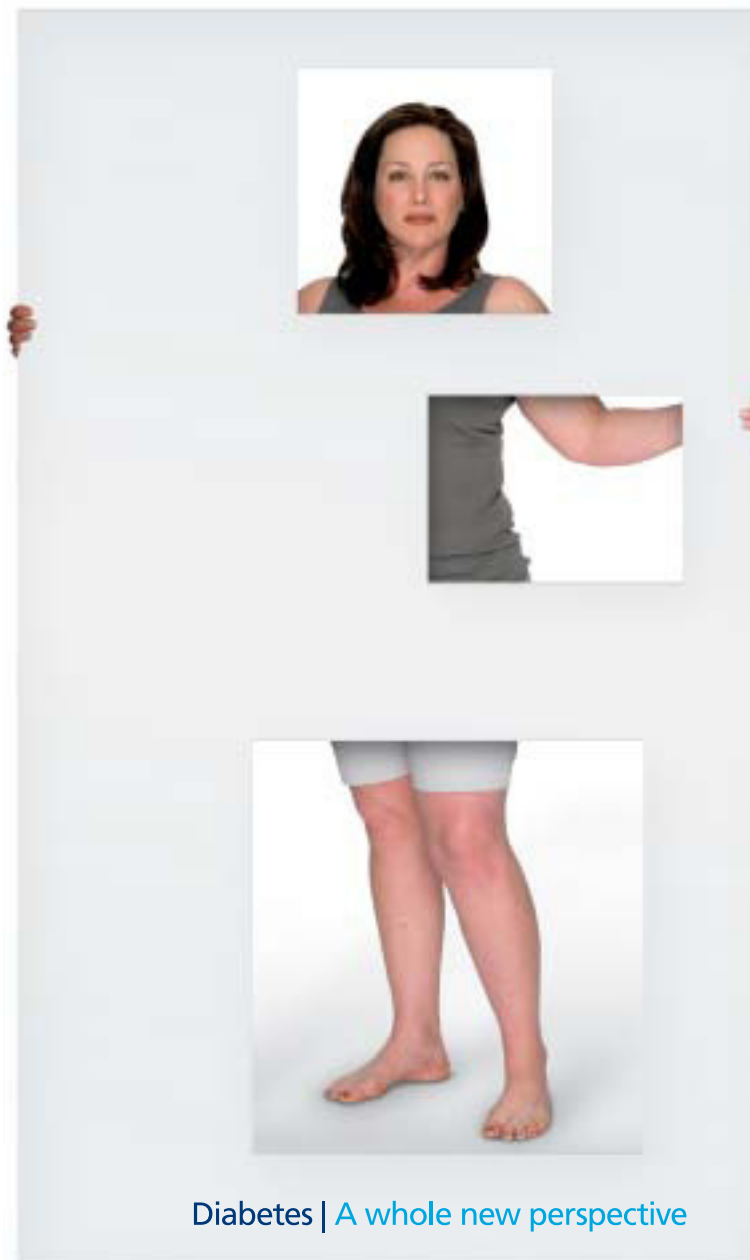
Dr. Blakely explained that "the decision to obtain CT often came from the referring pediatrician or emergency physician before the patient reached us."

"You can get a score of 9 without having a CT scan," Dr. Williams added. "So

[the score] can be utilized without a CT scan, but we had one on a majority of our patients."

The scoring system "must be prospectively evaluated in other institutions to make it generalizable," according to study discussant Dr. Kurt D. Newman, a pediatric surgeon at Georgetown University Hospital in Washington. Dr. Blakely agreed that validation is warranted.

"The value of this scoring system, at least from what I can see, depends primarily on your point of view about interval appendectomy," said Dr. James A. O'Neill Jr., chairman emeritus of the department of surgery at Vanderbilt University, Nashville, Tenn. "If one searches the Cochrane database, there is no evidence that that is the best approach. We should be cautious about application of these data across the nation." ■



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