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Upon completion of this exercise the participant will better identify the use of a clinical guideline to evaluate appendicitis in children.

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CME Prospective Evaluation of a Clinical Practice Guideline for Diagnosis of Appendicitis in Children

Genevieve Santillanes, MD, Sonia Simms, MD, Marianne Gausche-Hill, MD, Michael Diament, MD, Brant Putnam, MD, Richard Renslo, MD, Jumie Lee, MSN, CPNP, Elga Tinger, MD, and Roger J. Lewis, MD, PhD

Abstract

Objectives: The objective was to assess the performance of a clinical practice guideline for evaluation of possible appendicitis in children. The guideline incorporated risk stratification, staged imaging, and early surgical involvement in high-risk cases.

Methods: The authors prospectively evaluated the clinical guideline in one pediatric emergency department (ED) in a general teaching hospital. Patients were risk-stratified based on history, physical examination findings, and laboratory results. Imaging was ordered selectively based on risk category, with ultrasound (US) as the initial imaging modality. Computed tomography (CT) was ordered if the US was negative or indeterminate. Surgery was consulted before imaging in high-risk patients.

Results: A total of 475 patients were enrolled. Of those, 193 (41%) had appendicitis. No low-risk patient had appendicitis. Medium-risk patients had a 19% rate of appendicitis, and 83% of high-risk patients had appendicitis. Factors associated with an increased likelihood of appendicitis included decreased bowel sounds; rebound tenderness; and presence of psoas, obturator, or Rovsing's signs. Of the 475 patients, 276 (58%) were managed without a CT scan. Seventy-one of the 193 (37%) patients with appendicitis went to the operating room without any imaging. The rate of missed appendicitis was 2%, and the rate of negative appendectomy was 1%.

Conclusions: The clinical practice guideline performed well in a general teaching hospital. Rates of negative appendectomy and missed appendicitis were low and 58% of patients were managed without a CT scan.

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Pediatric abdominal pain is a frequent complaint in the emergency department (ED), and 1% to 10% of children presenting to acute care settings with acute abdominal pain are diagnosed with appendicitis.[1–3] Children with appendicitis often lack classic historical and physical examination findings.[4] Determining which children have appendicitis can be challenging and delayed diagnosis is common, especially in young children.[5–7] The use of computed tomography (CT) in the workup of suspected appendicitis has increased

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dramatically as providers attempt to make timely and accurate diagnoses while minimizing negative appendectomies.[8–10] Some authors advocate routine CT in patients with suspected appendicitis.[11] However, there are conflicting data on whether the increased use of CT has improved diagnostic accuracy in children.[9,12–15]

The increased use of ionizing radiation in children is especially concerning because radiation exposure may increase future risk of malignancy.[16–19] The American College of Radiology developed evidence-based imaging guidelines for patients with right lower quadrant pain. In children requiring imaging, the guidelines favor a right lower quadrant graded compression ultrasound (US), followed by CT if the US is indeterminate.[20] Multiple protocols have been published for selective imaging of children with suspected appendicitis to limit radiation exposure while avoiding misdiagnosis.[21–24] Kosloske et al.[21] recommend early involvement of a pediatric surgeon with selective imaging in atypical cases. Their rate of misdiagnosis was low, but their protocol is not feasible in hospitals without ready access to pediatric surgeons. Garcia Peña et al.[22] published results of a staged imaging pathway with initial US followed by CT if the appendix was not visualized or if the US was equivocal. Pediatric radiology attending physicians or fellows read all studies and the misdiagnosis rate was low.

These studies addressed the challenge of making an accurate diagnosis of appendicitis in children while minimizing radiation exposure. However, these protocols relied on availability of pediatric surgeons and radiologists. There is a need for a protocol limiting radiation exposure that can be used in settings without 24-hour access to these specialists. We developed and studied a protocol for evaluation of children with suspected appendicitis in the pediatric ED of a general teaching hospital. Our protocol incorporated risk stratification based on history, physical examination, and laboratory results in a staged imaging pathway and early surgical involvement only in high-probability cases.[21–23]

METHODS

Study Design

This was a prospective cohort study. We describe the performance characteristics of a novel clinical practice guideline developed for diagnosing pediatric appendicitis in a general hospital lacking 24-hour attending radiology and pediatric surgery coverage. The institutional review board of Harbor–UCLA Medical Center approved the study protocol with waiver of informed consent for completion of data forms and chart review. Parents were verbally consented at the time of follow-up phone call.

Study Setting and Population

The study was conducted from July 2006 through April 2009 in an urban pediatric ED with approximately 20,000 annual patient visits. The pediatric ED is staffed with a combination of pediatric, emergency medicine, and pediatric emergency medicine attending physicians. A single pediatric radiologist was available during business hours 4 days per week, and radiology residents performed most preliminary interpretations of diagnostic imaging studies. Prior to institution of this guideline, right lower quadrant US was not used for evaluation of appendicitis. US technicians and radiology residents had limited experience with US for appendicitis. Prior to study initiation, all radiology residents and fellows were trained to mastery by the chief of US (RR). Before the guideline was implemented, most patients underwent CT with oral and intravenous contrast prior to appendectomy. Patients from 2 years up to the 18th birthday who were being evaluated for possible appendicitis and had a complete blood count sent were included in the study. Exclusion criteria were pregnancy and previous appendectomy.

Study Protocol

A multidisciplinary committee of radiologists, surgeons, and emergency physicians developed the clinical practice guideline for evaluation of patients being evaluated for appendicitis. The guideline was adopted as the ED's standard (Figure 1). Providers could deviate from the protocol as needed based on the clinical scenario. Patients were classified as being at low, medium, or high risk for appendicitis based on physical examination findings, duration of pain, white blood cell count, and differential count. Low-risk patients were discharged home with 6- to 12-hour follow-up for a repeat examination in the pediatric ED or clinic. High-risk patients had a surgical consultation ordered. Any diagnostic imaging ordered in high-risk patients was at the discretion of the surgical chief resident or attending. The surgical consultant was required to examine the patient before imaging was ordered. Medium-risk patients were managed at the discretion of the pediatric ED attending physician with the options of 6- to 12-hour follow-up, a surgical consultation, or a right lower quadrant US. In girls undergoing US, a transabdominal pelvic US for virginal females or a transvaginal pelvic US for sexually active females was also ordered to evaluate for ovarian pathology. If the right lower quadrant US was negative or indeterminate and the physical examination continued to be concerning, an abdominal/pelvic CT scan was ordered. Practitioners were instructed to consider US studies nondiagnostic if the appendix was not visualized. Surgery was consulted if the US was positive for appendicitis.

All ED providers were trained in the study protocol by one of the investigators. The guideline was posted prominently in the work area of the ED and monthly reminders were e-mailed to providers. Attending and resident physicians and nurse practitioners providing care in the pediatric ED enrolled eligible patients by filling out data collection forms. Enrollment occurred 24 hours a day, 7 days per week. The data collection form included historical, physical examination, and laboratory data and preliminary results of imaging studies. Historical and physical examination findings were reviewed with the attending physician and recorded on the data collection form in real time before laboratory and radiology results were available. The preliminary, not final, radiology reports were entered into the study database to reflect information available at the time of clinical decision-making. The chart was reviewed

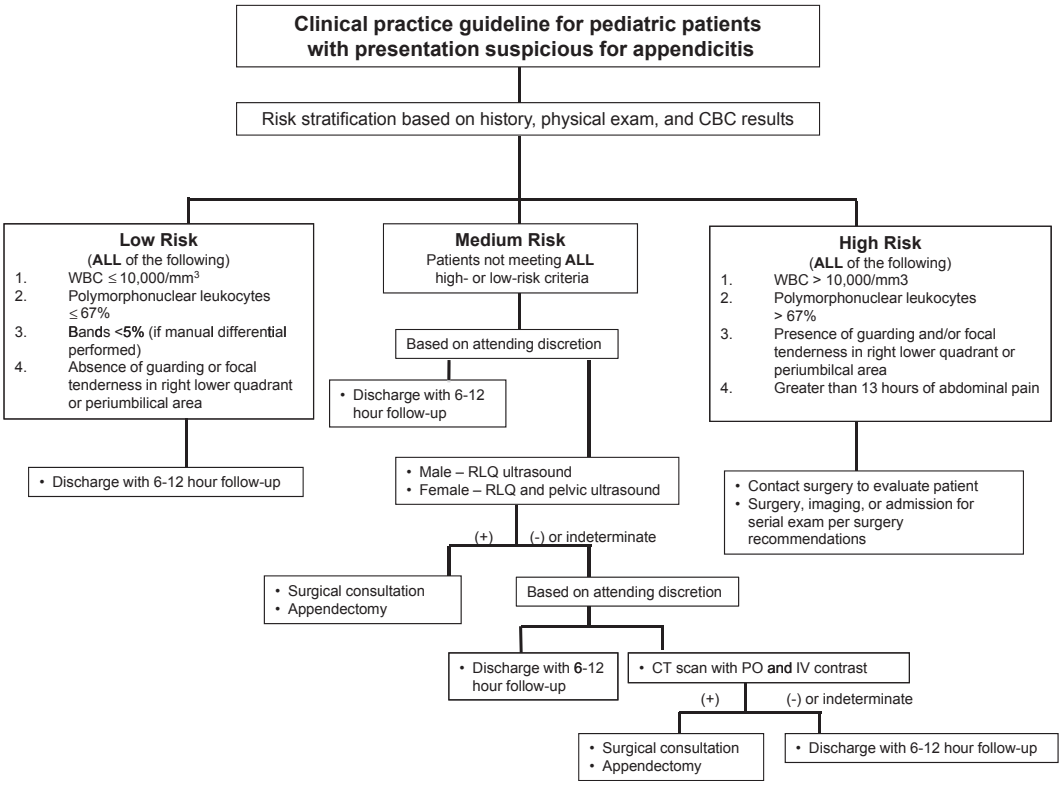

Figure 1. Clinical practice guideline for pediatric patients with suspected appendicitis. CBC = complete blood count; CT = computed tomography; IV = intravenous; PO = by mouth; RLQ = right lower quadrant; VQ = ventilation perfusion scan; WBC = white cell blood count.

for discharge diagnosis and operative and pathology reports. Operative and pathology reports were reviewed for diagnosis of normal appendix, nonperforated appendicitis, or perforated appendicitis. To minimize bias in cases of discrepancy, the pathology report diagnosis was used as the final diagnosis, because the pathologists were not aware of the study and did not have results of any imaging performed preoperatively. Patients not diagnosed with appendicitis were either seen in follow-up clinic or called to ensure that no cases of appendicitis were missed. Parents were verbally consented at the time of the follow-up phone call. Scripted phone calls were made starting 1 week after the ED visit. Four investigators (GS, SS, JL, ET) made follow-up phone calls, performed chart reviews, and entered data into an electronic database. Microsoft Excel and Access (Microsoft Corp., Redmond, WA) databases were used.

Potential missed enrollments were identified by a nurse practitioner who reviewed every ED visit and identified all patients with chief complaints of abdominal pain or vomiting or final diagnoses of abdominal pain, vomiting, appendicitis, or acute gastroenteritis. These charts were reviewed in detail by one of two investigators (SS or GS). An encounter was considered a missed enrollment if the data collection form was not completed for a patient who had a complete blood count, did not meet exclusion criteria, and had either documented right lower quadrant tenderness or an attending or resident physician medical decision-making note indicated that the diagnosis of appendicitis had been considered.

Outcome Measures

The performance of the clinical practice guideline was evaluated using primary outcome measures of rates of missed appendicitis (false-negatives), negative appendectomy (false-positives), CT use, and rates of appendicitis in each risk group.

Data Analysis

The study databases were translated into native SAS format using DBMS/Copy (Dataflux Corp., Cary, NC). Data were analyzed using SAS 9.1.3 (SAS Institute, Cary, NC). Medians and interquartile ranges (IQRs) were used to summarize numerical variables. The Wilcoxon rank sum test was used to compare numerical variables, and chi-square or Fisher's exact tests were used to compare categorical variables. P-values of less than or equal to 0.05 were considered statistically significant. No adjustments were made for multiple comparisons. Positive and negative likelihood ratios were calculated for historical factors, physical examination findings, and laboratory values associated with appendicitis. Positive likelihood ratios greater than 3 and negative likelihood ratios less than 0.33 were considered clinically useful.[25] Because clinical decision-making in cases of equivocal radiology studies was complex and incorporated all available clinical data, for study purposes, equivocal radiology studies were excluded from sensitivity and specificity calculations.

RESULTS

Of 704 eligible patients presenting during the 32-month study period, 475 (67%) were enrolled (Figure 2). Just over half of the enrolled patients were boys, and the median age was 11 years (IQR = 7 to 15 years). The median body mass index was 19.3 (IQR = 16.7 to 23.8). Thirty-one patients (7%) were classified as low-risk, 267 (56%) as medium-risk, and 177 (37%) as high-risk. A total of 193 (41%) enrolled patients had final diagnoses of appendicitis, of which 34 (18%) were perforated. No low-risk patient had appendicitis. Three medium- and three high-risk patients diagnosed with appendicitis were transferred to other hospitals for surgery for insurance reasons or because the pediatric surgeon was unavailable. Of the 264 medium-risk patients not transferred out, 49 (19%) had final diagnoses of appendicitis. Of the 174 high-risk patients not transferred out, 144 (83%) had appendicitis. Patients not enrolled in the study were demographically similar to enrolled patients; of missed enrollments, five (2%) were low-risk, 138 (60%) were medium-risk, and 86 (38%) were high-risk. Eighty-nine (39%) of the missed enrollments had appendicitis, 137 (60%) were not diagnosed with appendicitis, and the final diagnoses was unknown for three (1%). The appendicitis rate of missed enrollments was not statistically different from the appendicitis rate of enrolled patients (41% vs. 39%, p = 0.68). Historical, physical examination, and laboratory findings of the patients are presented in Table 1. Historical factors increasing the likelihood of appendicitis included right lower quadrant pain, vomiting, anorexia, obstipation, and greater than 13 hours of pain, although the positive likelihood ratios are not as useful given that the population was selected because they were suspected of having appendicitis. Rates of diarrhea did not differ significantly between children with appendicitis and those with other final diagnoses. Physical examination findings increasing the likelihood of appendicitis included decreased bowel sounds, right lower quadrant tenderness, guarding, and rebound tenderness. Psoas, obturator, and Rovsing's signs had positive likelihood ratios for appendicitis of 3.1, 3.5, and 3.9, respectively. In contrast, the absence of right lower quadrant tenderness and absence of an elevated white blood cell count significantly decreased the likelihood of appendicitis. Only 10 (5%) patients with appendicitis lacked right lower quadrant tenderness, and only eight of 193 (4%) had a polymorphonuclear leukocyte count of 67% or less.

Diagnostic imaging by risk category is presented in Table 2. Of 475 patients enrolled, 299 (63%) had right lower quadrant US studies, and 199 (42%) had CT scans. A total of 155 (33%) had both studies, and 132 (28%) had no imaging. No diagnostic imaging was performed in 61% of low-risk patients, 19% of medium-risk

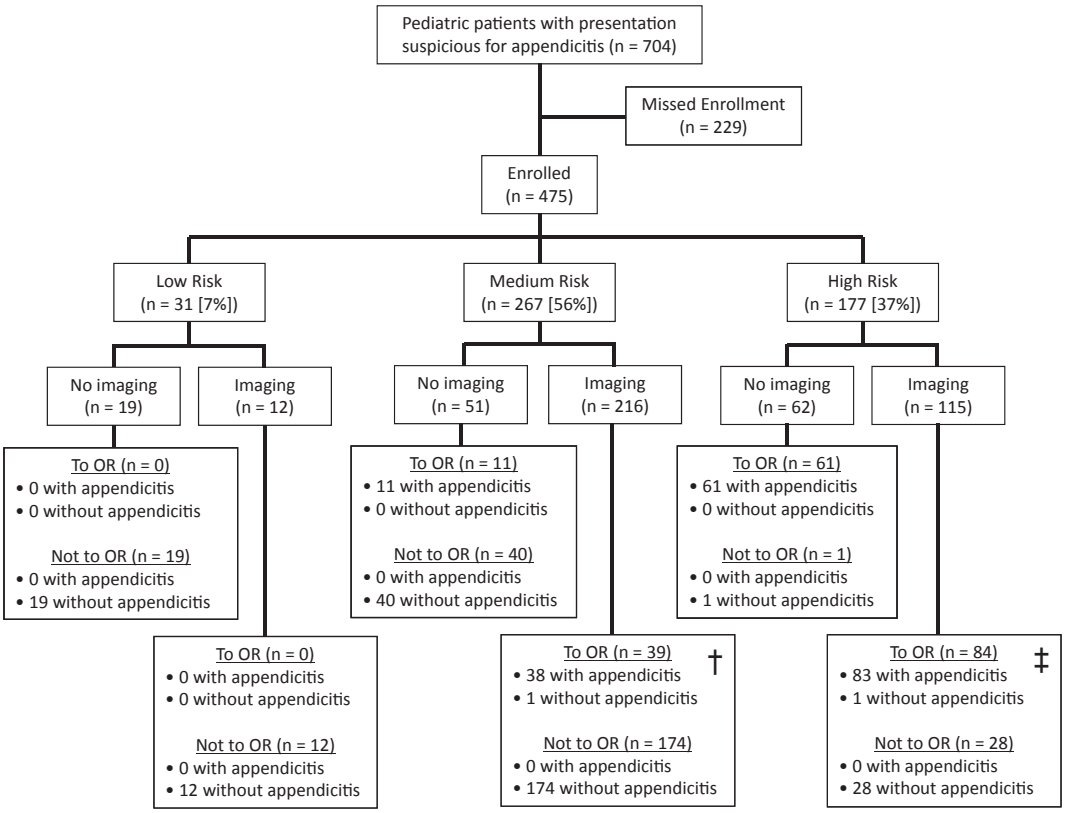

Figure 2. Flow chart of study population with disposition and final diagnoses by risk category. †Listing of medium-risk patients who were imaged excludes three subjects who were transferred and missing a final diagnosis. Thus, the total number of subjects in this box is 213 rather than 216. ‡Listing of high-risk patients who were imaged and went to the operating room (OR) includes two patients who underwent interval appendectomies. Three high-risk patients who underwent imaging were transferred and final diagnoses are not listed. Thus, the total number of subjects in this box is 112 rather than 115.

Table 1
Historical, Physical Examination, and Laboratory Findings In Patients With Appendicitis Compared to Patients With Another Final Diagnosis*

Findings	Appendicitis (*n* = 193)	Not Appendicitis (*n* = 276)	Positive Likelihood Ratio (95% CI)	Negative Likelihood Ratio (95% CI)
Historical				
Periumbilical pain	95/190 (50)	133/268 (50)	1.01 (0.84–1.21)	0.99 (0.83–1.20)
RLQ pain	172/189 (91)	173/270 (64)	1.42 (1.29–1.57)	0.25 (0.16–0.41)
Diffuse abdominal pain	56/186 (30)	73/263 (28)	1.08 (0.81–1.45)	0.97 (0.86–1.09)
Other location of abdominal pain	39/180 (22)	84/261 (32)	0.67 (0.49–0.94)	1.16 (1.03–1.29)
Vomiting	141/193 (73)	168/274 (61)	1.19 (1.05–1.35)	0.70 (0.53–0.92)
Anorexia	155/193 (80)	152/269 (56)	1.42 (1.25–1.61)	0.45 (0.33–0.62)
Obstipation	30/181 (17)	22/260 (8)	1.96 (1.17–3.28)	0.91 (0.85–0.98)
Diarrhea	42/192 (22)	49/271 (18)	1.21 (0.84–1.75)	0.95 (0.87–1.05)
Greater than 13 hours of abdominal pain	164/190 (86)	174/255 (68)	1.26 (1.14–1.40)	0.43 (0.29–0.64)
Physical examination				
Fever (in ED)	60/192 (31)	90/274 (33)	0.95 (0.73–1.25)	1.02 (0.90–1.16)
Absent or decreased bowel sounds	72/182 (40)	35/271 (13)	3.06 (2.14–4.38)	0.69 (0.61–0.79)
Periumbilical tenderness	80/192 (42)	100/270 (37)	1.13 (0.90–1.41)	0.93 (0.80–1.08)
RLQ tenderness	182/192 (95)	187/276 (68)	1.40 (1.28–1.53)	0.16 (0.09–0.30)
Diffuse tenderness	51/189 (27)	59/267 (22)	1.22 (0.88–1.69)	0.94 (0.84–1.04)
Tenderness in other location	48/184 (26)	87/268 (32)	0.80 (0.60–1.08)	1.09 (0.97–1.23)
Guarding	133/190 (70)	85/273 (31)	2.25 (1.84–2.75)	0.44 (0.35–0.55)
Rebound	68/188 (36)	35/274 (13)	2.83 (1.97–4.07)	0.73 (0.65–0.82)
Positive psoas sign	69/180 (38)	32/263 (12)	3.15 (2.17–4.58)	0.70 (0.62–0.80)
Positive obturator sign	61/180 (34)	25/260 (10)	3.52 (2.30–5.39)	0.73 (0.65–0.82)
Positive Rovsing's sign	64/187 (34)	23/265 (9)	3.94 (2.54–6.11)	0.72 (0.65–0.80)
Laboratory				
White blood cell count >10,000	172/193 (89)	142/276 (51)	1.73 (1.53–1.96)	0.22 (0.15–0.34)
Polymorphonuclear leukocytes >67%	185/193 (96)	168/276 (61)	1.57 (1.43–1.74)	0.11 (0.05–0.21)

RLQ = right lower quadrant.
*Not all information is available for all patients. Denominator reflects number of patients for whom information was available. Values in parentheses are percentages or 95% CIs.

Table 2
Diagnostic Imaging Performed by Risk Category

Category (*n*)	No Imaging	US Only	CT Only	Both Imaging Studies
All patients (475)	132 (27.8)	144 (30.3)	44 (9.3)	155 (32.6)
Low-risk (31)	19 (61.3)	10 (32.3)	1 (3.2)	1 (3.2)
Medium-risk (267)	51 (19.1)	95 (35.9)	23 (8.6)	98 (36.7)
High -risk (177)	62 (35)	39 (22)	20 (11.3)	56 (31.6)

All values are reported as *n* (%).
US = ultrasound.

patients, and 35% of high-risk patients. Ninety-six (50%) patients with a final diagnosis of appendicitis had US studies, and 69 (36%) had CT scans. In our center, US had a high specificity (99%) but a low sensitivity (47%). US had a 4% false-positive and a 20% false-negative rate (Table 3). CT had a specificity of 98% and a sensitivity of 91%, with a 5% false-positive and 5% false-negative rate (Table 4).

The rates of missed appendicitis and negative appendectomy were low. Of 195 appendectomies performed, only two (1%) resulted in the removal of a normal appendix. Both patients with negative appendectomies underwent preoperative imaging. One patient had a negative US and CT scan and was admitted for pain control and serial abdominal examinations. She continued to have significant right lower quadrant tenderness and underwent a negative appendectomy. No other pathology was seen at the time of laparoscopy. The other patient with a negative appendectomy had a negative US and a CT scan interpreted as concerning for appendicitis.

The diagnosis of appendicitis was initially missed in four of 193 patients (2%) ultimately diagnosed with appendicitis. One patient did not have laboratory or imaging studies at his first visit and was not enrolled in the protocol. He was discharged, immediately returned, found to be high-risk, and diagnosed with appendicitis. The other three patients were classified as high-risk at their first visit, and all had imaging studies on the first visit. Two patients did not have surgical consultations in violation of study protocol. Both had CT scans and US studies interpreted as normal. Both were found to

Table 3
RLQ US Results

	Final Diagnosis	
Result	Appendicitis	Not Appendicitis
RLQ US positive	44 (96)	2 (4)
RLQ US equivocal	5 (63)	3 (38)
RLQ US negative	49 (20)	196 (80)

Values are reported as *n* (%).
Specificity = 99%; sensitivity = 47%
$p < 0.0001$ for all, calculated using chi-square test.
RLQ = right lower quadrant; US = ultrasound.

Table 4
Abdominal CT Results ($p < 0.0001$*)

	Final Diagnosis	
Results	Appendicitis	Not Appendicitis
CT Positive	59 (95)	3 (5)
CT Equivocal	4 (44)	5 (56)
CT Negative	6 (5)	119 (95)

Values reported as *n* (%).
Specificity = 98%; sensitivity = 91%.
CT = computed tomography.
*p-value calculated using chi-square test.

have appendicitis, at scheduled next-day follow-up. The fourth patient had a CT scan read as possible appendicitis but the surgical team felt that appendicitis was unlikely. The patient was admitted for serial abdominal exams and was taken to the operating room after the attending radiologist interpreted both the US and CT as likely appendicitis. Appendicitis was confirmed intraoperatively and by pathology review.

To our knowledge, no other cases of appendicitis were missed. Attempts were made to follow up on all patients not diagnosed with appendicitis. Forty-eight patients (10%) were lost to follow-up. Of those, 40 were medium-risk, two were high-risk, and six were low-risk. Six patients presumptively diagnosed with appendicitis were transferred out due to lack of availability of a pediatric surgeon. Operative and pathology reports were not available on these patients and they were not included in the final analysis.

DISCUSSION

We instituted and prospectively evaluated a clinical practice guideline for workup of possible appendicitis in one pediatric ED. With this clinical practice guideline, the rate of missed appendicitis was low (2%), and the negative appendectomy rate was even lower (1%). Of the four patients with missed appendicitis, two were managed in violation of the clinical practice guideline, and one was initially not entered into the study protocol. One concern about staged imaging protocols is that the final diagnosis will be delayed, resulting in a higher perforation rate. Our perforation rate of 18% is comparable to perforation rates of 17% to 23.5% seen in other recent studies.[4,14,26,27]

Our clinical practice guideline involved risk stratification with early surgical consultation for high-risk patients and staged imaging for medium-risk patients. Our risk stratification is largely based on the risk classifications of Garcia Peña et al.[23] with the addition of right lower quadrant tenderness as a factor. We believe that this is a useful addition because right lower quadrant tenderness was far more sensitive than guarding. Only 70% of patients with appendicitis had guarding, but 95% had right lower quadrant tenderness.

Early pediatric surgical consultation for all patients with possible appendicitis has been advocated by some.[21,27] However, in most EDs, pediatric surgeons are not available to see all patients with possible appendicitis. We were able to identify a high-risk group with an appendicitis rate of 83%. Early surgical consults for patients at the highest risk of appendicitis might limit unnecessary imaging without burdening surgeons with an excessive number of consultations. In a recent study of pediatric surgical consultation for all cases of suspected appendicitis, 43% of patients were managed without imaging.[28] However, the missed appendicitis rate was almost 9%, much higher than our missed appendicitis rate of 2%.

Appropriate imaging of patients with suspected appendicitis continues to be controversial, and imaging practices vary by center. One study found that non-children's hospitals were more likely to perform CT scans for suspected appendicitis than a regional children's hospital.[29] Smink et al.[30] published results of a clinical practice guideline with CT as the initial imaging study in most patients. Their clinical guideline performed well, with low rates of missed appendicitis and negative appendectomy. We achieved similarly low rates of negative appendectomy and missed appendicitis, but with a lower rate of CT and selective surgical consultation. The American College of Emergency Physicians (ACEP) 2010 policy states that US can confirm, but not exclude appendicitis.[31] Our data support this policy. Our rate of false-positive US was low and similar to the false-positive rate for CT. The ACEP policy states that a negative CT can be used to rule out appendicitis. Our data suggest that in a patient with a high pretest probability, a negative CT is not sufficient to rule out appendicitis. CT does not have 100% sensitivity, and overreliance on CT in high-risk patients could result in missed appendicitis. In our population, relying solely on CT to rule out the diagnosis in high-risk patients would have resulted in a 7.4% chance of missed appendicitis.

With the implementation of this clinical practice guideline, we were able to limit ionizing radiation exposure while maintaining low rates of missed appendicitis and negative appendectomy. Prior to this guideline, at our institution US was not used in the evaluation of possible appendicitis, and almost all patients were evaluated by CT before appendectomy. Introduction of the clinical practice guideline decreased the number of CT scans performed for children with suspected appendicitis, but it is difficult to calculate exactly how many CTs were avoided. In a recently published study by Ramarajan et al.,[24] their protocol was considered to have avoided a CT if an US was ordered and not followed by a CT. If we made the same assumption, use of the

clinical practice guidelines would have saved 144 CTs in our population of 475 patients.

Although other authors have published results of selective imaging protocols for pediatric appendicitis, most of those studies occurred in children's hospitals. We implemented this protocol in a general teaching hospital with general surgery residents providing most consultations, and radiology residents providing preliminary imaging interpretations. We have demonstrated that such a protocol can be successfully implemented in a general teaching hospital.

LIMITATIONS

The main limitation of this study is the rate of missed enrollments. We did not have research personnel and depended on ED physicians and nurse practitioners to identify and enroll patients and, therefore, were unable to enroll all patients. In some cases, data were missing because the practitioner did not completely fill out the data collection form. Overall the population of nonenrolled patients had similar demographic characteristics and rates of appendicitis as the study population.

Attending physicians were free to deviate from the guidelines based on clinical judgment, and some patients did have imaging not recommended by the guidelines. These protocol violations are a limitation of the study. A significant percentage of low-risk patients had imaging performed. However, none of these patients had appendicitis. Almost 9% of medium-risk patients had CT scans instead of US studies as recommended by the guidelines.

We made multiple attempts to contact patients who were discharged home. However, some phone numbers provided were incorrect or disconnected, and we were unable to contact some patients. None of the patients contacted had sought treatment at another hospital for abdominal pain. We believe this rate of missed appendicitis is accurate. However, we cannot exclude the possibility that a patient was diagnosed with appendicitis at another hospital after being discharged from our ED.

CONCLUSIONS

The use of a clinical practice guideline for risk stratification and selective imaging of patients with suspected appendicitis is feasible in a general teaching hospital. In this study, use of this clinical practice guideline resulted in a 2% rate of missed appendicitis and a 1% rate of negative appendectomy.

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SAEM Names Executive Director

SAEM Members,

As President of the Society For Academic Emergency Medicine, I am pleased to announce that your Board of Directors has hired our current Interim Executive Director, Ronald S. Moen, to become the full time Executive Director of SAEM as of July 16, 2012.

In the past six months, Ron has done an outstanding job in helping SAEM move forward on many issues, and although his original plan was to remain with us for only a year on an interim basis, the Board asked him to reconsider that original plan. He has agreed to stay on as the Executive Director for the foreseeable future and work with the Board, Staff and membership in helping us fulfill our mission and strategic plan.

Please join me in welcoming Ron to this permanent role with our Society.

Sincerely,

Cherri D. Hobgood, MD
President
Society For Academic Emergency Medicine