Childhood Appendicitis A Clinical Profile

S.K. Pandit
A. Kaul
Z. Habib
H.U. Zarger

ABSTRACT

A study to assess the reliability of clinical symptoms and signs in 50 patients with a presumptive diagnosis of acute appendicitis is presented. The male to female ratio was 3 : 2, with age ranging from 2 to 15 years.

Abdominal pain was present in 42; tenderness was localized in 35, generalized in 11 and diffuse in 4 patients. Total leucocyte count was above 11,000/cu mm in 31, below 11,000/cu mm in 17 and above 18,000/cu mm in 2. Of the 48 operated patients, 8 had normal appendices and the diagnosis in them was Meckel's diverticulitis 3, ruptured ovarian follicle 2, mesenteric adenitis 2, and salpingo-oophoritis 1. Abdominal pain and right iliac fossa tenderness with contributory investigations are the most reliable indicators of acute appendicitis with a false positive rate of 16.66% only.

Key words: Appendicitis, Peritonitis, Appendicectomy, Pylephlebitis.

From the Department of Surgery, Government Medical College and SMHS Hospital, Srinagar, J & K (India).

Reprint requests: Dr. Satish K. Pandit, Division of Pediatric Surgery, Institute of Medical Sciences, Banaras Hindu University, Varanasi: 221 005, India (U.P.).

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Appendicitis is an important abdominal emergency that is reportedly uncommon in people consuming high fiber diet(1). The condition however affects both sexes and all age groups, being rare in neonates but most common during later childhood(2-4). The diagnosis of appendicitis in children is difficult; an early diagnosis can save a patient from a lot of morbidity. We present our experience in 50 patients with the suspected diagnosis of acute appendicitis. This study was undertaken to find the clinical spectrum and the clinical diagnostic accuracy in acute appendicitis.

Material and Methods

During the years 1987-89 we saw 50 patients with a provisional diagnosis of acute appendicitis at the Sri Maharaja Hari Singh Hospital, Srinagar, Kashmir.

A detailed history of symptoms including fever, pain abdomen, vomiting and bladder or bowel disturbances was elicited. A general physical and systemic examination was done in all cases. Investigations included a total and differential leucocyte count, urine examination and plain *X*-ray abdomen in standing position. Forty eight patients were operated with a presumptive diagnosis of acute appendicitis.

Results

Of the 50 patients, 30 were males; the age ranged from 2 to 15 years. Thirty patients were between 5 and 10 years, 13 were over 10 years and only 7 were below 5 years of age. These patients constituted 2.4% of the hospitalized abdominal emergencies of all age groups. Abdominal pain followed by vomiting and fever was the initial symptom in 30 patients. Six patients had loose motions, vomiting with abdominal pain and

were previously diagnosed and treated as gastroenteritis. Three patients between 2 and 5 years old had fever followed by abdominal pain and decreased appetite. One patient had dysuria and abdominal pain. Fever followed by abdominal pain, jaundice and vomiting were seen in an eleven-year-old girl who was subsequently diagnosed to have acute appendicitis with pylephlebitis. One patient presented with acute onset of limping and psoas spasm due to appendicitis. Eight patients had vague symptoms referrable to abdomen. Overall significant abdominal pain was present in 42 patients. The duration of symptoms was less than 24 hours in 30 cases, 24-48 hours in 6 cases and more than 48 hours in 14 cases. One patient was jaundiced. Abdominal distension of mild to moderate degree was present in 15 patients. Localized right iliac fossa tenderness was present 35 patients, generalized tenderness in 11 and diffuse lower abdominal tenderness in 4 patients. Rectal digital examination showed tenderness in 20 patients. The leucocyte count was above 11,000/cu mm in 31, below 11,000/cu mm in 17 and above 18,000/cu mm in 2 patients. Urine examination revealed pus cells (less than 5) in 3 patients and red blood cells (less than 10) in 2 patients only. Localized ileus on plain *X*-ray abdomen was seen in 10 and multiple air fluid levels in 10 patients. No other radiological evidence suggestive of appendicitis was found.

One patient left against medical advice and one patient was managed with systemic antibiotics, nasogastric tube decompression and intravenous fluids. Forty eight patients were operated. Of the 48 patients, 40 showed appendicitis on laparotomy and underwent appendicectomy. Peritonitis was found in 20 patients. It was generalized in 10 and localized, restricted to right iliac fossa and adjoining area, in 10 patients. Peritoneal lavage with normal saline was done in all patients with generalized peritonitis following appendicectomy and the peritoneal cavity was drained.

In 8 patients the appendix was normal. In them the diagnosis of Meckel's diverticulitis in 3, ruptured ovarian follicle in 2, mesenteric adenitis in 2 and salpingo-oophoritis in one patient was made following laparotomy. Abdominal pain, vomiting, fever was present in all the 3 patients with Meckel's diverticulitis and in all the counts were above 11,000/cu mm. Two patients with ruptured ovarian follicle had vague abdominal pain and mild tenderness in right iliac fossa and hypogastrium: however, the counts were below 11,000/cu mm. Two patients with mesenteric adenitis had periumbilical pain and right iliac fossa tenderness, however one patient had history of such attacks in the past as well. In one patient count was above 11,000/cu mm and in the other it was below 11,000/cu mm. The patient with salpingo-oophoritis had history of more than 48 hours and tenderness in the lower abdomen, moreso on the right side and the count was more than 11,000/cu mm.

Round worms, the most common gut parasite in children in this area, were found as obstructive agents in 8 appendices and fecoliths were found in 2 patients only. In 30 patients no gross obstructive lesion could be seen. Wound infection occurred in 16 patients. In one patient complete dehiscence of the wound occurred. There were no deaths.

Discussion

Appendicitis is not an uncommon disease entity and constitutes one of the important pediatric emergencies(5). Boys are

more frequently affected than girls(6). Although pain, vomiting and fever are the commonest symptoms of appendicitis(7), occasionally other symptoms including anorexia and diarrhea may occur(8). Variability of symptoms and difficulty in localization of pain in children is well known and the diagnosis may be missed, which can lead to delay in therapy and increased morbidity(7,8).

Abdominal examination may not always be contributory and on such occasions other findings are helpful. Tenderness on rectal digital examination indicating appendicitis is elicited in up to 50% patients(7,9); however, its validity in infants and toddlers appears doubtful. The leucocyte count may be increased and more than 10,000/cu mm in 95% cases, a count of over 20,000/cu mm is suggestive of peritonitis; however only 38% patients with perforated appendicitis have count above 20,000/cu mm(9,10). In the present study, leucocyte count over 11,000/cu mm was found only in 28 (70%) patients with appendicitis. Radiologically, presence of a fecolith, dilatation of cecum, air fluid levels and edema of abdominal wall may be useful supportive evidence of acute appendicitis(11). Ultrasonography has a very high diagnostic sensitivity and specificity in acute appendicitis(12,13) and helps in distinguishing appendicular mass from appendicular abscess(14).

In spite of clinical features and suggestive investigations, 8-20% appendices may be found to be normal(15-19), occasionally false positive diagnosis may be as low as 1.5%(6). In this study the false positive diagnosis rate was 16.66%; the alternative diagnosis in these patients was Meckel's diverticulitis, ruptured ovarian follicle, mesenteric adenitis and salpingo-oorphoritis.

Fecolith is the commonest obstructing agent followed by hypertrophied lymphoid follicle and intestinal parasites leading to appendicitis(4). However, in Kashmir, ascaris is the commonest obstructing agent(15). High incidence of ascaris causing obstruction and a low incidence of fecolith could probably be explained only on the basis of high incidence of worm infestation and consumption of a high residue diet, respectively. Childhood appendicitis, as in the present study, is frequently complicated by peritonitis(15-20) which is due to a delay in diagnosis, low immunity and underdeveloped omentum.

From this study we conclude that abdominal pain with localized tenderness and contributory investigations (raised leucocyte count) are most frequent and reliable findings suggestive of acute appendicitis. We suggest that all such children must be assessed carefully for appendicitis and a leucocyte count be done in all such cases and the child be observed. However, routine radiological examination is not necessary. The operative decision must be guided mainly by the clinical condition of the patient and thereby prevent morbidity and mortality in such cases.

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Liquid Acute Epidural Hematoma

R.K. Mahajan
B.S. Sharma
V.K. Khosla

Epidural hematoma(EDH) occurs in 1.5 to 3.5% of children admitted with craniocerebral trauma(1). Computed tomography(CT) permits identification of an acute EDH by its biconvex lenticular shaped appearance and the blood density representing a solid clot(2). We report two cases of acute EDH seen as isodense biconvex mass lesions on CT and at surgery containing liquid blood.

From the Department of Neurosurgery, Postgraduate Institute of Medical Education and Research, Chandigarh-160 012.

Reprint requests: Dr. B.S. Sharma, Department of Neurisurgery, Postgraduate Institute of Medical Education and Research, Chandigarh 160 012.

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