Pediatr Surg Int (2005) 21: 582–584
DOI 10.1007/s00383-005-1450-5

CASE REPORT

Abraham Mammen · Shaji Ponnambathayil
K. Karthikeya Varma · E. K. Suresh Kumar

A rare complication of appendicitis: appendiculorenal sinus with renal cellulitis

Accepted: 22 September 2004 / Published online: 13 July 2005

Abstract This report describes a rare complication of appendicitis, renal cellulitis, which led to a diagnostic dilemma in a 2-year-old girl who presented with fever of long duration.

Keywords Appendicitis · Renal sinus · Renal cellulitis

Introduction

Appendicitis is notorious for its rare and bizarre presentations that may lead to diagnostic dilemma in many instances. Preoperatively we had considered the diagnosis of a degenerating renal malignancy in a 2-year-old girl who presented with fever of two months' duration that was associated with sterile pyuria and an abdominal ultrasonogram showing a heterogenous renal mass. Despite extensive preoperative investigations, the diagnosis of appendiculorenal sinus with renal cellulitis became apparent only at laparotomy.

Case report

A 2-year-old girl was investigated for fever of two months' duration. She had been subjected to several courses of antibiotics during that time. Routine investigation for her fever showed that she had pyuria and that her total white blood cell count and erythrocyte sedimentation rate were elevated. Urine culture was sterile. Abdominal ultrasound revealed a heterogeneous rounded lesion in the midportion of the right kidney (Fig. 1). The intravenous urogram and 24-hour urine vanillylmandelic acid were normal. Because the possibility of a healthy child's developing a renal abscess is rare, cystic degeneration in a renal tumor was considered and laparotomy undertaken.

At laparotomy it was found that the ascending colon up to half of its proximal length was mobile. The appendix was about 10 cm length and retrocecal in position, and its tip seemed to be adherent to the posterior surface of the colon. There was no malrotation of the intestine. On mobilization of the colon, the tip of the appendix was found to be adherent to the anterior surface of the kidney at the junction of its middle third and lower third. On careful separation, a communication was found between the kidney and the appendix, through which a black fibrous material was seen to be passing from the lumen of the appendix to the substance of the kidney (Fig. 2). The communication was big enough to allow entry of the tip of an artery forceps at both the appendicular and the renal sides (Fig. 3). Needle aspiration from the area surrounding the adhesion and fistula formation of the kidney yielded a few drops of pus mixed with blood and renal tissue. The kidney was otherwise normal in appearance and feel. The distal portion of the appendix looked inflamed. Appendectomy was done, and a drain was kept near the kidney.

Postoperatively the patient rapidly improved and became afebrile and active. On the 2nd postoperative day the drain was removed, and the patient was discharged the next day. Histopathologic examination showed that the appendix was inflamed and that the aspirated material from the kidney contained no malignant tissue. The black material that was passing through the fistula was found to be a vegetable fiber. Culture of the pus obtained from the kidney showed no growth.

On her follow-up visit after 1 month, the child was asymptomatic. Ultrasonography of the abdomen was repeated, and the previously detected renal lesion was found to have almost completely resolved (Fig. 4). The child's urine examination was normal.

A. Mammen (✉) · S. Ponnambathayil · K. K. Varma
E. K. S. Kumar
Department of Paediatric Surgery,
Malabar Institute of Medical Sciences,
Govindapuram, Calicut, Kerala, 673016, India
E-mail: abraham_mammen@hotmail.com
Fax: +91-495-2741329

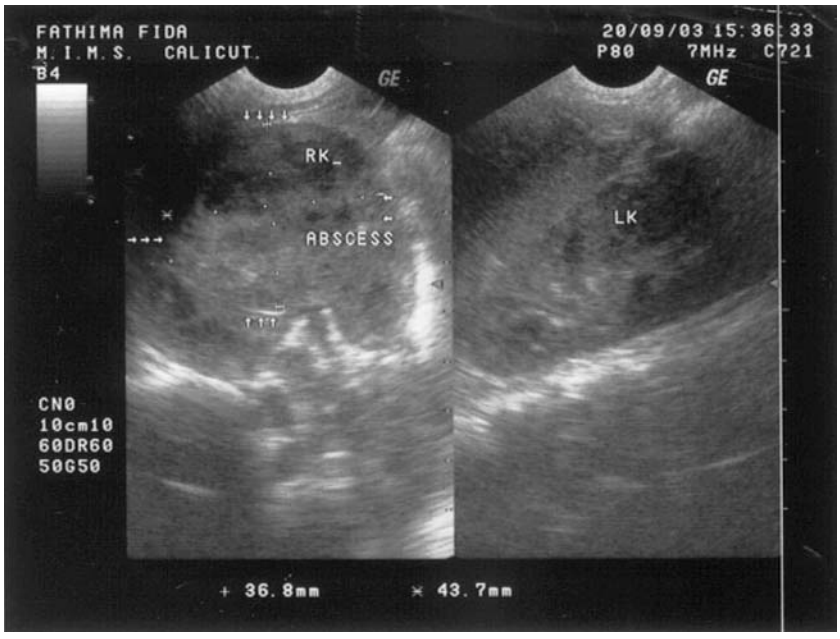

Fig. 1 Preoperative ultrasonogram showing the cellulitic changes in the right kidney

Discussion

Complications following inflammation of the appendix, including abscess formation, perforation, and appendicular mass formation, are not uncommon. Apart from the usual complications of appendicitis, there are a few that are rarely encountered, such as perirenal abscess formation, ureteric obstruction, renal artery thrombosis, pyuria, hematuria, acute pyelonephritis, and acute prostatitis [2]. After appendectomy, the appendicular stump may produce an enterocutaneous fistula. However, the appendix's perforating and forming a sinus or a fistulous communication with the neighboring structures is a very rare complication of appendicitis. Corder reported a case of a gas-forming abscess in the right kidney of a 72-year-old woman who had recently been diagnosed as diabetic and in whom adhesion of the appendix and adjacent colon to the pelvis of the right kidney was noticed on exploration [1]. The renal abscess cavity was communicating with the appendix. This patient was in shock and septicemia at the time of presentation, and appendectomy along with the previously planned nephrectomy was carried out. Her diabetes could be controlled only after the nephrectomy and appendectomy were done.

In Crohn's disease, the appendix is only very rarely included in the fistula formation when the terminal ileum or the cecum is involved. The rare occurrence of fistula between the kidney and the gastrointestinal tract shows a predilection for duodenum and ascending colon

Fig. 2 Vegetable fiber passing from the appendix into the kidney

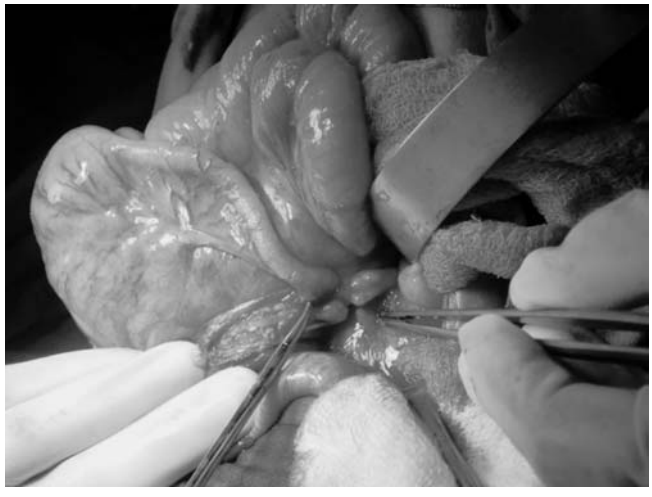

Fig. 3 Tip of the artery forceps showing the opening in the appendix and tip of the thumb forceps pointing to the opening of the sinus in the kidney

Fig. 4 Ultrasound picture 6 weeks later showing a normal right kidney

on the right-hand side and for descending colon on the left.

Although appendiculorenal sinus with renal cellulitis has been reported in a geriatric patient with diabetes mellitus, to our knowledge this is the first report of a similar complication in the pediatric age group with no known comorbid conditions.

References

1. Corder AP (1987) Renal abscess with gas formation secondary to acute appendicitis. Br J Urol 59(1):90
2. Jones WG, Barie PS (1988) Urological manifestations of acute appendicitis. J Urol 139(6):1325–1328