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Case Report

Epiploic appendagitis of caecum: a diagnostic dilemma

Appendicitis epiploica des Blinddarms: ein diagnostisches Dilemma

Abstract

Epiploic appendagitis is a rare cause of acute abdomen. Depending on the site of occurrence, it can mimic any cause of acute abdomen or disease of the colon and caecal appendix; making its preoperative diagnosis very difficult. We present here a case of a 7-year-old boy misdiagnosed preoperatively as acute appendicitis and later on, upon surgical exploration, found to have caecal appendagitis. The affected epiploic appendage was removed and the patient had an uneventful recovery. We also review the relevant literature and discuss the measures to overcome this diagnostic dilemma. General surgeons should be aware of this self-limiting disease and consider it as a differential diagnosis of acute abdomen.

Keywords: caecal appendagitis, appendices epiploicae, torsion, acute appendicitis, epiploic appendagitis, acute abdomen

Zusammenfassung

Appendicitis epiploica oder epiploische Appendagitis ist eine seltene Ursache des akuten Abdomens. Je nach Ort des Auftretens kann sie jede Ursache für akuten Unterleibsschmerz oder Erkrankungen des Dickdarms und Appendix vermiformis imitieren, was ihre präoperative Diagnose sehr schwierig macht. Wir präsentieren hier den Fall eines 7 Jahre alten Jungen, bei dem präoperativ akute Blinddarmentzündung diagnostiziert wurde. Beim chirurgischen Eingriff stellte sich dann eine Appendicitis epiploica des Blinddarms als Befund heraus. Der betroffene Appendix epiploica wurde entfernt und der Patient erholte sich ohne besondere Vorkommnisse. Wir geben auch eine Übersicht über die relevante Literatur und diskutieren die Maßnahmen, um dieses diagnostische Dilemma zu überwinden. Allgemeine Chirurgen sollten sich dieser selbstlimitierenden Krankheit bewusst sein und sie als eine Differentialdiagnose bei akutem Abdomen in Betracht ziehen.

Schlüsselwörter: Appendicitis epiploica, Appendices epiploicae, Torsion, akutes Abdomen, epiploic appendagitis

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Introduction

Appendices epiploicae are small pouches of fat protruding from the serosal surface of colon distributed axially from caecum to rectosigmoid. They are usually arranged in two longitudinal rows along the tinea libera and omentalis and are supplied by one or two arterioles from the vasa recta of the colon, and are drained by a single venule [1]. Inflammation of these appendices epiploicae, also known as epiploic appendagitis, is a very rare cause of acute abdomen. Depending on the site of occurrence, it can mimic any cause of acute abdomen and can be a source of diagnostic dilemma. Mostly, epiploic appendagitis involves the sigmoid colon and is confused with diverticulitis. If it involves the caecum, it may mimic acute appendicitis or any other cause of acute pain in the right lower abdomen like regional enteritis, ovarian torsion, salpingoophoritis, typhillitis and perityphillitis [2]. Epiploic appendagitis occurs usually beyond the fourth decade of life; and only few anecdotal reports of caecal epiploic appendagitis involving young children have been published till date [3], [4]. We present here a case of a 7-year-old boy misdiagnosed preoperatively as acute appendicitis; who was later upon surgical exploration found to have caecal epiploic appendagitis. The relevant literature has been reviewed and we also discuss the measures to overcome this diagnostic dilemma.

Case description

A 7-year-old boy, with a body mass index of 28.72 kg/m^2, presented to the emergency department of a tertiary care hospital in Kashmir with dull pain in the right lower abdomen for one day, progressively increasing in intensity to become sharper, and was accompanied by nausea and anorexia. Patient's temperature was 37.6°C and pulse rate was 104 beats per minute. On abdominal examination, he had guarding, tenderness, and rebound tenderness in the right iliac fossa. The blood counts were unremarkable except for leukocytosis (14,300 cells/µL) with predominance of neutrophils (82%). Urine examination was normal. A presumptive diagnosis of acute appendicitis was made. Ultrasonography of the abdomen documented minimal inter-loop fluid and few dilated gut loops in the right iliac fossa.

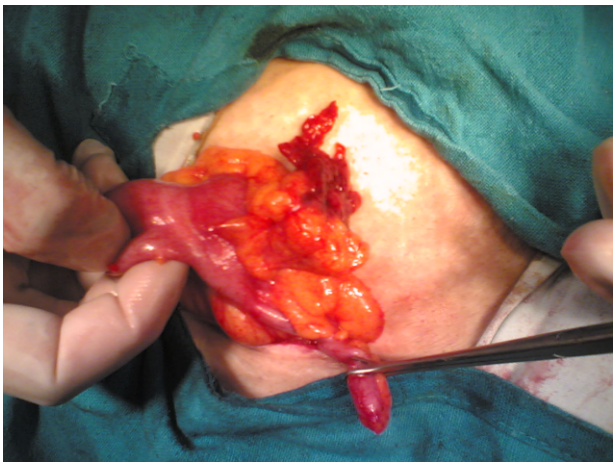

Figure 1: Inflamed appendix epiploica of the caecum with grossly normal appendix

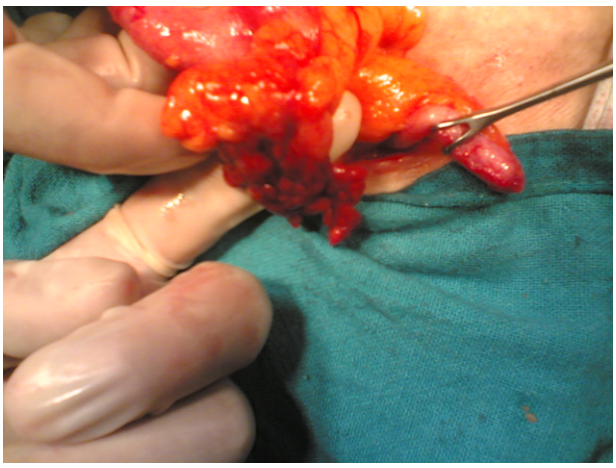

Figure 2: Detorsion of the appendix epiploica was done. Also seen is the grossly normal vermiform.

In view of the clinical presentation, the patient was planned for emergency appendectomy. Abdomen was accessed through Mcburney's incision. During surgery, minimal serous fluid was seen in the right paracolic gutter and the appendix was grossly normal. However, an inflamed and gangrenous appendix epilploica was noticed on the caecum (Figure 1). Other neighboring viscera were grossly normal. This gangrenous epiploic appendage was removed and seromuscular inversion was done at that site (Figure 2). Appendectomy was also accomplished. Patient had an uneventful recovery and was discharged on the second postoperative day. Histopathology confirmed the diagnosis of epiploic appendagitis with normal vermiform appendix.

Discussion

Appendices epiploicae are pedunculated fatty outpouchings lining the colon. Apart from adipose tissue, they also contain blood vessels, and typically have a length of 0.5–5 cm [5]. A normal adult human being usually has about 50–100 appendices epiploicae increasing progressively in size and number towards the rectosigmoid [6]. Thus, not surprisingly, most cases of epiploic appendagitis are seen on the left side [7]. Epiploic appendagitis is a very rare occurrence. In a series of 1,320 cases of acute abdominal pain by Golash et al. only eight cases were due to acute epiploic appendagitis [8].

Epiploic appendagitis is seldom diagnosed preoperatively due to the lack of pathognomonic clinical features. The clinical features are nonspecific and include sharp pain localized to a part of the abdomen, mostly the left lower quadrant. The site of pain varies with the position of the appendage involved. The temperature may be normal or slightly elevated. White blood cell count is marginally elevated. There can be signs of peritoneal irritation [9]. All these nonspecific features coupled with the fact that epiploic appendagitis is a very rare occurrence, make its inclusion in the differential diagnosis of acute abdomen a rarity. In the study by van Breda Vriesman et al. [10], acute appendagitis was included in the clinical differential diagnosis in only two of 49 patients of acute abdomen.

Mostly involving middle aged people, this disease peaks at 40 years [7]. This disease does not seem to have a sex predilection [11]; however Szunyogh et al. found an abnormally high incidence in females [12]. Epiploic appendagitis is rarely seen in patients younger than 19 years and is almost unknown in children [3], [4]. Only few case reports of epiploic appendagitis involving caecum in children have been published in literature [3], [4]. One report has suggested obesity as a risk factor [2]. Our patient was a 7-year-old obese boy and is the youngest one to be reported.

Epiploic appendagitis is often confused with diverticulitis of the sigmoid colon but can mimic acute appendicitis when it occurs on the right side and poses a diagnostic dilemma. It was in 1908 when Briggs first reported a case of torsion of an appendices epiploicae (appendagitis) mimicking appendicitis [13]. Epiploic appendagitis may also mimic acute cholecystitis if proximal part of transverse colon is involved [9] and ovarian torsion if caecum or sigmoid colon is involved [2].

A thorough and careful radiological workup may help in resolving this diagnostic dilemma. An ultrasound of the

abdomen reveals a hyperechoic, non-compressible pericolonic mass, frequently surrounded by a hypoechoic border [5], [6]. Since epiploic appendagitis is usually an ischemic event, a lack of central flow is seen on colour Doppler [14]. Singh AK et al. reported that the most common CT appearance of acute epiploic appendagitis is the presence of 1.5 to 3.5 cm diameter fat-density lesion with surrounding inflammatory changes abutting the anterior wall of the colon [15]. The colonic wall thickness is usually normal. There may be an associated thickening of visceral peritoneum. The ovoid fat density lesion seen in epiploic appendagitis is generally surrounded by a hyperdense ring and may have a central high intensity dot [15]. These findings differentiate it from omental infarction. Magnetic resonance findings include an ovoid fat intensity with a central dot on T1 and T2 weighted images, which possess an enhancing rim with gadolinium [3]. The above mentioned findings have been seen in adults and, experience with these investigations is limited in children. But there is no reason why the data from these studies cannot be extrapolated to children.

The optimum treatment for epiploic appendagitis is a matter of contention. Most of the studies that have been published agree that if diagnosed preoperatively, it should be managed conservatively with antibiotics and analgesics. The symptoms usually resolve within 1 week (mean of 4.7 days) without surgical treatment [3]. The CT findings take about 6 months to get resolved [15]. If the diagnosis is made upon exploration, the best strategy is to remove the affected appendage and do seromuscular inversion of the affected portion of gut [4]. Laparoscopy offers an excellent option for the management of epiploic appendagitis [16]. In addition to diagnosing the problem, laparoscopy can also be used to treat it. In our case we performed an open exploration through Mcburney's incision and after resecting the involved appendage, performed a seromuscular inversion of the affected part of the bowel.

Conclusion

In conclusion, caecal epiploic appendagitis can pose a diagnostic dilemma and may be confused with acute appendicitis. General surgeons should be aware of this self-limiting disease and keep it as a differential diagnosis in acute abdomen. Contrast enhanced CT of the abdomen may prove beneficial in the preoperative assessment of the patient.

Notes

Competing interests

The authors declare that they have no competing interests.

Parental consent

A written and informed consent was taken from the father of the patient for this publication since the patient was a minor.

Authors' contribution

A. Rashid and S.Y. Hakim operated the patient. S. Nazir provided the histological details. A. Rashid, M.A. Chalkoo, S.Y. Hakim had a role in the pre- and postoperative management of the patient. A. Rashid, S. Nazir, M.A. Chalkoo and S.Y. Hakim were involved in literature search and drafted the manuscript. All the authors have read and approved the manuscript.

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