Case Report

The Association of Isolated Cecal Necrosis Symptoms with Acute Appendicitis: A Case Report

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ABSTRACT

We report a case of isolated cecal necrosis (ICN) associated with acute appendicitis in a geriatric patient in order to underline the didactic, diagnostic and therapeutic interest. This was a 70-year-old widowed female farmer living in a rural area who presented with localized abdominal pain in the right iliac fossa. The diagnosis of acute appendicitis was made. A Mac Burney incision approach revealed ICN and an inflamed appendix. The patient had an ileostomy and a partial cecal necrosectomy with an epiploic patch. A digestive fistula occurred on postoperative Day 60. The patient was transferred to a more technical center where she had a right hemicolectomy with latero-lateral ileocolic anastomosis. The prognosis was poor. The patient died 4 days later in respiratory distress.

Keywords: abdominal pain, aged, appendicitis, female, iliac fossa

Introduction

Isolated cecal necrosis (ICN) is a rare differential diagnoses for pain in the right lower quadrant of the abdomen [1-3]. ICN is an emergency typically observed in the elderly suffering from renal insufficiency, obstructive arterial disease, or heart disease [1], and results in a significant increase in risk of mortality [2,4]. ICN is often diagnosed intraoperatively because symptoms usually mimic appendicitis making a diagnosis of ICN difficult [5,6]. The aim of this study was to present a case of ICN with acute appendicitis in a geriatric patient.

Case Report

The patient was a 70-year-old widowed female farmer living in a rural area who presented with localized abdominal pain in the right iliac fossa. She was a Type 2 diabetic, with dyslipidemia, non-conflicting lumbosacral spondylolisthesis (L5-S1 listhesis). The patient received 2 herbal medicines that had not led to an improvement in symptoms.

The patient was admitted to hospital. Her blood pressure was 120/70 mmHg, with a pulse of 70 bpm, and a temperature of 37 °C. The patient was a little overweight (BMI 25.71 kg/m²: 70 kg for a height of 1.65 m). The patient had a history of intense asthenia and anorexia. Examination revealed a tusk in the right iliac fossa and on rectal examination there was pain on the right side. The blood count showed moderate anemia at 10 g/dL and hyperleukocytosis was not present. The electrocardiogram was normal. Five days before admission, after eating a meal, she experienced sudden onset violent abdominal pain. This was followed by 3 episodes of scybal stools covered in mucus, then an episode of rectal bleeding.

We noted that she had taken 2 plant-based medicines (before being hospitalized) in a health center where she was given multiple medications. It was on the 6th day of illness that she decided to leave the health center against medical advice and she presented at the university hospital.

Our health center is a Category 4 rural university hospital in West Cameroon, and therefore does not have an abdominal...
scanner (the nearest hospital with an abdominal scanner is 40 km away). The patient's health care was paid for by her children. The abdominal and pelvic ultrasound scan was performed and the results were normal (except for a slightly enlarged liver).

Five days of insomnia due to right side fossa pain, and a history of anorexia and intense asthenia were the major factors that led to the indication for surgery. The diagnosis of acute appendicitis was made. Once informed consent was obtained, the patient underwent emergency surgery. The McBurney incision approach revealed ICN on the antimesenteric border and an inflamed appendix in the catarrhal form (Figure 1).

An appendectomy, an ileostomy, a necrosectomy and cecal suturing using separate stitches with an epiploic patch over the cecal suture were performed (Figure 2). The patient was put on antibiotic therapy for 10 days consisting of metronidazole injections (500 mg × 3/day) and amoxicillin + clavulanic acid injections (1 g × 3/day).

The postoperative period was marked by suppuration of the surgical wound, requiring removal of the skin sutures and daily dressings. On postoperative Day 7, the emission of spherical, greenish formations, 2 cm in length, similar to parasitic larva, led us to institute parasite removal. The treatment consisted of praziquantel 400 mg, 1 capsule in a single dose, renewed 14 days later and metronidazole capsules 500 mg × 3/day, for 7 days. The progress was favorable with good transit and functionality of the ileostomy, emission of parasitic lava (unidentified), and there was good healing of the surgical wound.

The anatomopathological report indicated acute follicular appendicitis and an acute pan-parietal suppuration as having completely destroyed the cecal mucosa, dissociated the muscular planes which led to peritonitis (histological evidence) in the periphery, with no associated vasculitis. The absence of histological signs of malignancy and the absence of specific inflammatory lesions were noted in the 2 organs analyzed (appendix, caecum).

Due to the patient's social condition, she was kept in hospital. However, on postoperative Day 45, the patient had a heart attack and was transferred by ambulance to a cardiovascular clinic. Two weeks later, a digestive fistula occurred on the laparotomy scar (the ileostomy was functional; Figure 3).

The patient was transferred to another hospital with a better technical platform, to undergo another operation. During the median laparotomy straddling the umbilicus, a clean abdomen, and a well-directed colonic fistula to the skin were observed, and a right hemicolecction and latero-lateral ileocolic anastomosis with mechanical forceps were performed.

The postoperative course was marked by the death of the patient on postoperative Day 4 on the intensive care unit as a result of respiratory distress.

Discussion

Most reported cases of ICN have been revealed by an appendicular syndrome [1-3]. In this case, the association of ICN symptoms with acute appendicitis led to 2 differential diagnoses that were discovered intraoperatively.
ICN is generally located on the anti-mesenteric border as in this case [2], and is often observed in geriatric patients suffering from renal insufficiency, obstructive arterial disease, or heart disease [1]. In contrast, the patient in this case did not have any of these conditions.

Hyperleukocytosis is frequently associated with ICN and occasionally associated with acute appendicitis; poly-medication prior to the patient’s admission could be the reason for its absence (the appendix was inflamed).

The clinical state of ICN as well as aspects of its imaging may mimic other pathologies [5]. In this case, in addition to acute appendicitis and colonic cancer located in the cecum, cephalic diverticulitis and stercal perforation could have been considered as differential diagnoses [3]. Indeed, computed tomography images showing thickening of the cecal wall are often misinterpreted as a cecal neoplasm or an abscess [6].

Ischemic colitis is dependent on mesenteric infarction which may or may not be related to occlusive factors. Occlusive factors are arterial embolism or venous thrombosis; the main nonocclusive cause is mesenteric vasoconstriction. Among the causes of nonocclusive colonic ischemia there are 2 mechanisms: (1) spontaneous decrease in mesenteric blood flow with no identifiable cause; and (2) hypotension after decreased cardiac output or aortic surgery. Hypotension during dialysis and in trauma patients has been recognized as a cause of ICN [3]. To improve diagnostic accuracy, practitioners and radiologists should be aware of the risk factors associated with ischemic colitis [7].

Smoking, diabetes mellitus, advanced age, hypertension, dyslipidaemia, arterial obliteration, cocaine, thiopentone, cytotoxic agents are risk factors for nonocclusive mesenteric ischemia [1,7]. Three of these factors (diabetes, advanced age, dyslipidemia) were observed in our patient. The occurrence of a digestive fistula on postoperative Day 60 suggested that the suture of the cecal necrosectomy slice had not remained intact. This may have been related to low cecal perfusion flow. In addition, the results of the histological examination, which usually specifies the presence or absence of vasculitis and specific pathogens [8], indicated nonocclusive mesenteric ischemia.

Even if the choice of approach could be guided by various conditions, in the era of minimally invasive surgery, the preferred approach for such appendicular syndrome is laparoscopy [9,10]. It was not technically feasible in the context of our university hospital setting. If ICN was initially suspected, a median laparotomy would have allowed exploration of the entire abdominal cavity. A cecal resection and a right hemicolectomy are the 2 therapeutic options for ICN [3].

Few studies mention the therapeutic option of partial cecal resection and simple suture in the case of ICN [2,4]. Perko et al [2], unlike our case, reported a favorable outcome; however, in their case the patient histology revealed vascular thrombosis and their approach was laparoscopic. A right hemicolectomy with ileo-colic anastomosis is the most common treatment option, while the other option of partial cecal resection and ileo-cecal anastomosis is rarely used [2,3].

In 25%-60% of intestinal ischemia, nonocclusive mesenteric ischemia is involved and mortality is high (71%-100%) [3]. The mortality in our case was partly related to the delay in diagnosing leakage around the cecectomy site, and intra-abdominal sepsis caused by leakage at the cecectomy site following surgery, and these factors highly correlate with patient mortality.

In conclusion, ICN presents diagnostic and therapeutic challenges when associated with acute appendicitis. ICN should be systematically evoked in the presence of pain in the right lower quadrant of the abdomen in elderly polypathological patients. Early management is required to improve prognosis. The right-side hemicolectomy is the commonly used treatment option that produces good results.

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Author Contributions

Conception, analysis: SC. Conception analysis: MTM-P. Conception, analysis: ENCH. Design, execution: KKS. Validation of the case: OS.

Conflicts of Interest

Authors declare no conflicts of interest.

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Ethical Statement

Patient consent has been obtained.

Data Availability

Data concerning this case are archived in the surgical unit and can be made available on specific request.

References


