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Laparoscopic Excision of Omental Infarction Mass: A Case Report

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Abstract

Omental infarction is a very rare cause of an acute abdomen in children. Symptoms, in particular, display a great similarity to those of appendicitis. A 10-year-old boy with omental infarction was successfully treated by laparoscopic excision. The authors have demonstrated that laparoscopic excision is a technically feasible and safe method associated with a shorter hospital stay, no requirement for analgesics and a good cosmetic outcome.

Key words: *Omental infarction, omental torsion, laparoscopy, children*

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Introduction

Omental infarction is a very rare cause of an acute abdomen in children. The symptoms are particularly very similar to those of appendicitis [1,2]. It occurs more frequently in adults than in children. It is reported in 0.1% of the laparotomies performed due to acute appendicitis in children [3]. Although the pathology of omental infarction has been known for over a century, only a few cases had been reported until the last few years. The increase in the number of cases in recent years is considered to be associated with the increased prevalence of obesity among children and adolescents [4]. We present a 10-year-old boy with an initial diagnosis of complicated appendicitis, who was later identified as having a mass of omental infarction and treated successfully by laparoscopic excision.

Case Report

A 10-year-old boy was admitted to our pediatric emergency clinic with abdominal pain complaints and ongoing vomiting for one day. Physical examination revealed subfebrile fever, abdominal tenderness, guarding and rebound in the right lateral quadrant. Abdominal X-ray was unremarkable. Laboratory results revealed a white blood count (WBC) of 17500/mm3. Biochemistry values, including those for amylase and fibrinogen, were normal. Urinalysis was normal. The body mass index was under 5% percentile. In the abdominal ultrasonography, the appendix's diameter was measured as 8 mm, with fecalith identified in the lumen, and the other intra-abdominal organs were observed as being normal. The patient was admitted to the pediatric surgery clinic for treatment and follow-up with a preliminary diagnosis for an acute abdomen. Administration of intravenous fluid replacement and rectal enema were commenced. Abdominal ultrasonography was repeated the next day. The appendix could not be visualized, and omental edema was observed in the right upper quadrant. Due to the patient's complaints and the abdominal examination findings being unresponsive to treatment, a laparoscopic examination was planned with a presumed diagnosis for complicated appendicitis.

The patient was operated on under general anesthesia with endotracheal intubation. Following the introduction of the Veress needle into the patient's peritoneal cavity through an infraumbilical 1-cm curvilinear incision, pneumoperitoneum was created and a pressure of 10 mm Hg was maintained. A 10-mm trocar was inserted via the same incision, and a 10-mm 0-degree telescope was passed through this cannula. Under direct vision, a 5-mm trocar was inserted via a 5-mm incision on the left lower quadrant and another 5-mm trocar was inserted via a 5-mm incision on the suprapubic region. The procedure was then performed in a 30 degrees reverse Trendelenburg position. Intraabdominal exploration revealed that the appendix was located subserously and retrocecally in the right upper quadrant, extending to the liver hilus. However, no abnormalities were observed on the appendix. A hard mass with a diameter of 6 cm approximately was identified in the right upper quadrant, flanked by the omentum

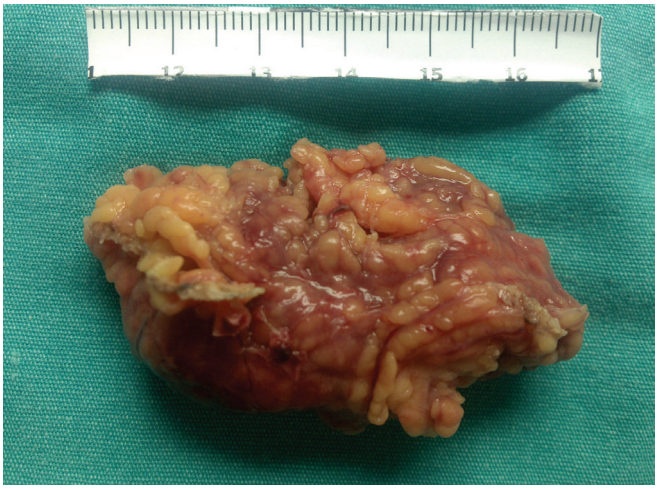

Figure 1. The omental infarction mass, with a size of 6x4 cm.

and originated from the lateral to the greater omentum. The omental adhesions were dissected and separated using a harmonic scalpel, and the mass was removed from the abdomen in an endobag after the incision of the suprapubic trocar site was extended to 2 cm. The appendix was also removed to avoid clinical complications that may occur in the future in case of abdominal pain, and also due to its abnormal localization. There were no perioperative complications. The patient was mobilized in the second hour postoperatively and was started to be fed by liquids in the fourth hour. As the pain score did not exceed 2 according to the verbal rating scale, no analgesics were required. The patient was discharged on the first postoperative day. Pathological examination confirmed a fat-filled mass, also partially covered by fat in certain sections, with patchy omental infarction and a diameter of 6 x 4 cm (Figure 1).

Discussion

The primary cause of omental infarction is generally unidentifiable, and the condition may develop with or without torsion [5]. It was first reported by Bush in 1896. As a consequence of the occlusion of the right epiploic artery, the infarction is normally observed on the right side of the omentum. The bifid structure of the omentum or the excessive fat accumulation in certain sections, especially in obese individuals, is considered to be a predisposing factor for omental infarction. Children with a body mass index over 95% especially have been reported as susceptible [6,7]; however, with a body mass index below 5%, our patient was not obese. Some authors consider vasculitis to be the cause of omental infarction [8]. Secondary omental infarc-

tion occurs more frequently, and develops as a result of cysts, tumors, internal hernia, and inflammation in the patient. Although a definitive diagnosis of omental infarction can be established solely with the use of Ultrasonography (USG) or Computed Tomography (CT), preoperative diagnosis, nevertheless, remains difficult. A correct preoperative diagnosis of primary omental infarction was possible in only 4.8% to 0.6% of all cases [9]. As the infarction is generally located on the right side of the omentum, and due to the similarity of the patient's complaints and the findings of the physical examination with the symptoms of acute appendicitis, it is commonly observed in patients operated on for acute appendicitis. Omental infarction was observed in 0.1% of children that underwent laparotomy with a presumed diagnosis of acute appendicitis [3].

Treatment for primary omental infarction is currently a matter of debate. Some authors propose a conservative treatment [10,11], whereas others mention the advantages of surgical treatment as the conservative treatment may necessitate the use of narcotic analgesics, lead to a prolongation of hospitalization and cause the formation abscesses. In addition, intestinal obstructions may occur as a consequence of adhesions. Using the laparoscopic procedure instead of laparotomy nowadays in these patients, the requirement for analgesics is minimized, the duration of hospitalization is reduced and the recovery time is improved [2, 12-14].

Due to the onset of symptoms, the findings from the physical examination and the results of the abdominal ultrasonography (in addition to the results of the patient's follow-up), our patient was initially assumed to have appendicitis. The absence of mass and the identification of omental edema in ultrasonography initially pointed to the presence of complicated appendicitis. However, a laparoscopic procedure allowed us to establish later on that the appendix was located in the upper right quadrant, extending to the liver hilus, and that an infarct mass was located in the omentum. Consequently, the laparoscopic procedure provided a definitive diagnosis for omental infarction, and treatment by means of the removal of the mass. This example serves as a good illustration of the complete examination of the abdomen provided by laparoscopy. Had a splitting incision of the right lower quadrant muscle been initially performed, it would have been considerably more difficult to achieve mass removal, and this would have necessitated an enlargement of the incision. These developments would have increased the length of the operative period and of the recovery time, and would have also worsened the cosmetic outcome. Postoperative analgesic use was not necessary with our patient, who was discharged on the first postoperative day. Our patient also had the noticeable benefit of reduced scar tissue, by having only a 2-cm suprapubic incision (mini phannenstiel), 1-cm curvilinear infraumbilical incision and the 0.5-cm incision in the left lower quadrant, all with a good cosmetic outcome.

In conclusion, laparoscopic excision for the treatment of omental infarction is technically feasible and safe, associated with shorter hospital stay, no analgesic requirement and a good cosmetic outcome.

Conflict of interest statement

The authors have no conflicts of interest to declare.

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