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CASE REPORT

Caecal Appendiceal Intussusception Caused by Endometriosis: A Case Presentation of Laparoscopic Management

Endometriozis Sebepli Çekal Apandiks İntussusepsiyonu: Laparoskopik Yönetim Olgu Sunumu

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ABSTRACT

Appendiceal intussusception is an extremely rare condition ranging from partial invagination of the appendix to involvement of the entire colon. It may be due to intraluminal foreign bodies, lymphoid hyperplasia, polyps, neoplasia, or endometriosis. Endometriosis is an extremely rare cause of appendiceal intussusception. Patients usually present with symptoms of acute appendicitis. In the case presented here, appendiceal invagination was detected in laparoscopic exploration during surgery for suspected acute appendicitis and was treated laparoscopically.
Keywords: Acute appendicitis, appendix intussusception, endometriosis

ÖZ

Apandiksin intussusepsiyonu, apandiksin kısmi invajinasyonundan kolonun tamamının tutulumuna kadar değişen son derece nadir bir durum olup, intraluminal yabancı cisimlere, lenfoid hiperplaziye, poliplere, neoplazilere ve endometriozis gibi kitlesel oluşumlara bağlı gelişebilir. Endometriozis, apandiks intussusepsiyonunun son derece nadir bir sebebidir. Genellikle akut apandisit semptomlarıyla hastalar başvururlar. Olgumuzda da akut apandisit ön tanısıyla cerrahi planlanan hastaya, laparoskopik eksplorasyonda tespit edilen apandiks invajinasyonunun, yine laparoskopik olarak cerrahi tedavisi sunulmuştur.
Anahtar Kelimeler: Akut apandisit, apandiks intussusepsiyonu, endometriozis

Introduction

Appendiceal intussusception is an extremely rare condition ranging from partial invagination of the appendix to involvement of the entire colon. Intussusception of the appendix may occur due to intraluminal foreign bodies or the formation of masses such as lymphoid hyperplasia, polyps, neoplasias, and endometriosis.[1] Endometriosis is an extremely rare cause of appendiceal intussusception, with very few cases reported in the literature to date.[2] Appendiceal endometriosis is known to cause not only acute and chronic symptoms of appendicitis,[3] but also cyclic and chronic right lower quadrant pain,[4] melena,[5] and intestinal perforation.

Case Report

A 35-year-old female patient presented with sudden-onset abdominal pain. She had no history of disease. On physical examination, there was sensitivity, defense, and rebound in the right lower quadrant. Laboratory tests showed leukocyte count: 7.89x10^3/µL and C-reactive protein: 0.35 mg/dL. Ultrasound revealed a 2 cm invagination of the appendix, which was enlarged with edematous walls. Radiological diagnosis was considered consistent with intussusception with concomitant acute appendicitis. The patient was admitted for surgery.

During laparoscopic surgery, inflammation and edema of the cecum were observed. At the teniae coli junction, an approximately 1 cm segment of the appendix segment was

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visible outside the cecum, while the rest was completely within the cecum (Figure 1, 2). A cecal cuff wedge resection was chosen as surgical treatment. After dissecting the fibrous bands from the point of appendiceal intussusception, an additional 1 cm segment could be removed from the cecum. The cecum was mobilized as far as the lateral peritoneum. A single laparoscopic endostapler (3.5 mm, 2.0 mm staple thickness, blue load) was used to perform linear resection of the cecum including the intussuscepted appendix so as to avoid the ileocecal valve (Figure 3). When the segment was removed from the abdomen, it was seen that the appendix had been totally excised (Figure 4, 5, 6). The surgery was completed by placing a drain. There were no postoperative complications and the patient was discharged on day 6. The specimen was determined to be endometriosis in pathological examination.

The patient provided informed consent to be described in this report.

Discussion

The symptoms of endometriosis vary according to the organ it affects.[6] Because it can occur in nearly every part of the gastrointestinal system, it has a broad spectrum of symptoms.[7] Endometriosis of the appendix can manifest with a variety of symptoms. Patients can present with clinical signs of acute appendicitis,[8] appendiceal intussusception,[6] or chronic abdominal pain, nausea, and melena.[9] Some patients may be asymptomatic.[10] Although our patient's history was unremarkable, she presented with sudden onset abdominal pain and clinical picture of acute appendicitis.

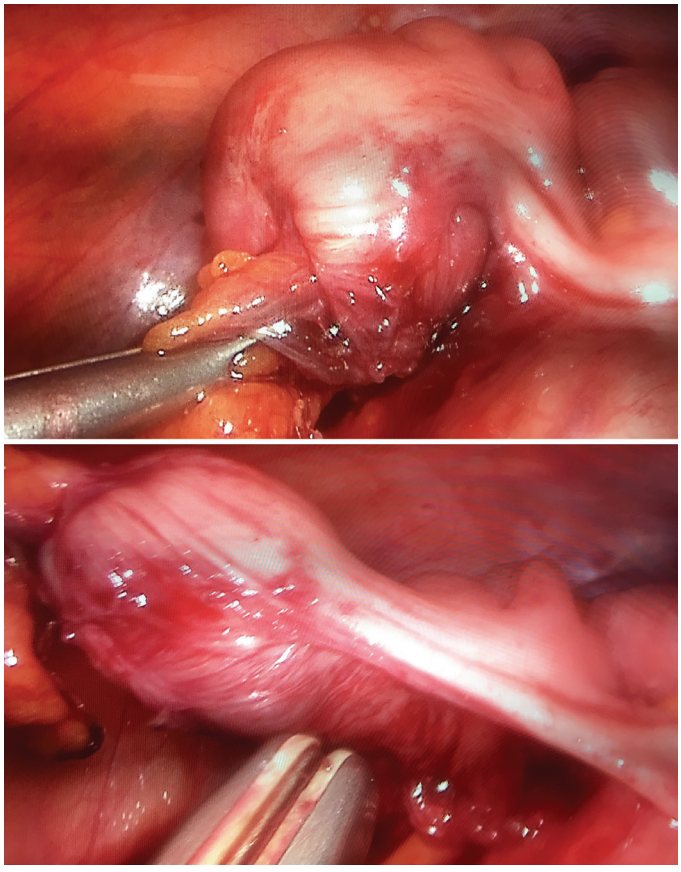

Figure 1, 2. Laparoscopic appearance of an approximately 1 cm segment of the appendix segment extending from the cecum at the teniae coli junction, while the rest was completely within the cecum

Appendiceal intussusception may occur due to intraluminal foreign bodies or mass formations such as lymphoid hyperplasia, polyps, neoplasias, and endometriosis.[1] Our patient was diagnosed postoperatively with endometriosis from pathology specimens.

Appendiceal intussusception can be diagnosed on ultrasonography as a classic target sign.[11] On computed tomography it typically appears as a mass within the cecum or as a target sign.[2] In our case, ultrasound revealed intussusception of about 2 cm of the appendix into the cecum, and the patient was diagnosed with acute appendicitis associated with intussusception.

Preoperative diagnosis of appendiceal endometriosis is difficult. It is diagnosed pathologically. Microscopy shows glandular tissue and endometrial stroma with hemorrhage.[1] Our patient was also diagnosed by pathological examination in which typical endometrial tissue was observed in microscopy, and immunohistochemical examination revealed positive reactions for estrogen receptors and progesterone receptors in stroma and epithelial cells as well as positive CD10 reaction in stroma cells.

According to some publications, appendectomy with cecal cuff resection is recommended for appendiceal intussusception. The appendix stump can undergo intussusception again or cause leaks after appendectomy; therefore, cecal cuff resection is proposed to ensure the

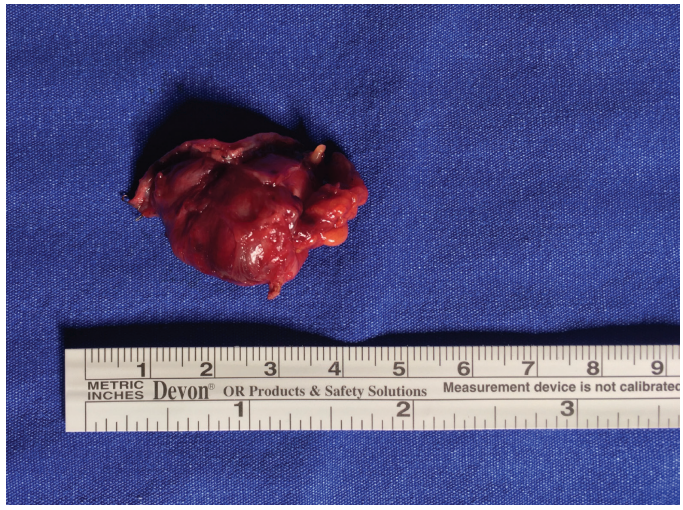

Figure 3. Linear excision of the invaginated segment using laparoscopic stapler

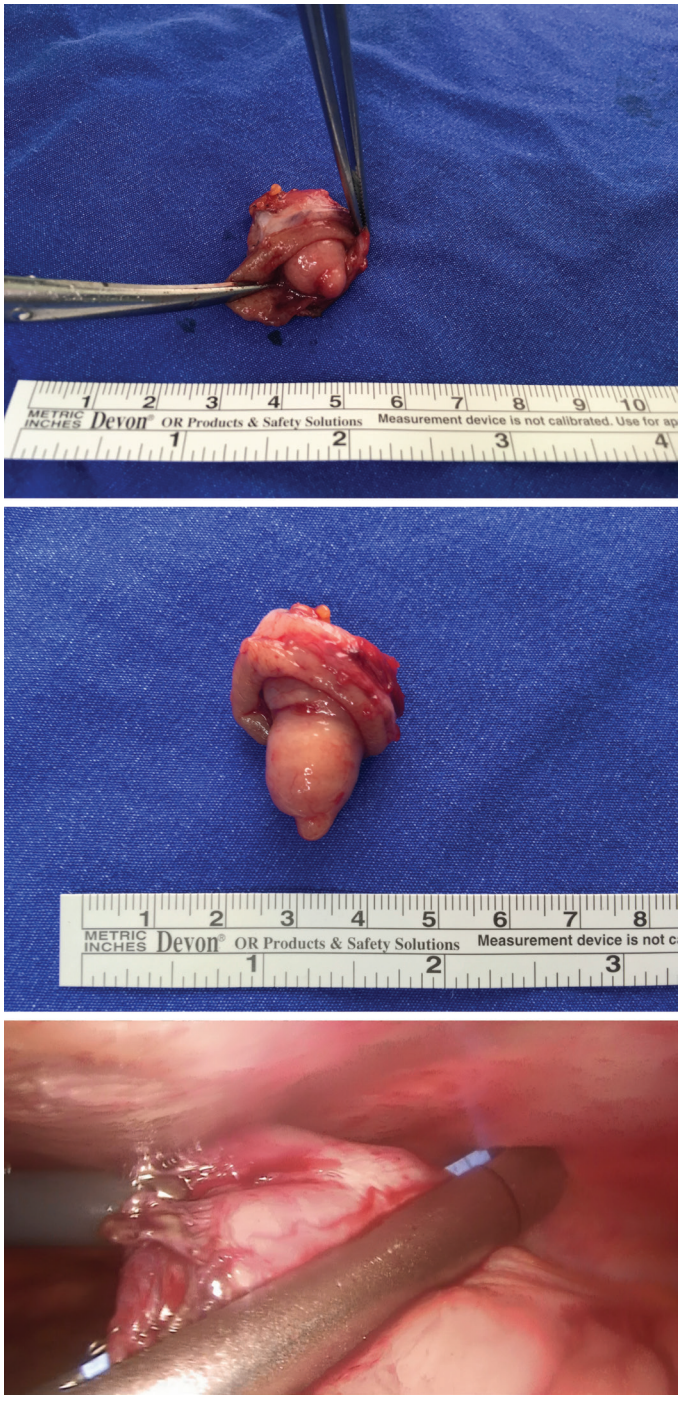

Figure 4, 5, 6. Appearance of completely excised appendix in control performed by removing the segment from the abdomen

appendix stump is removed.[12] We also performed a cecal cuff linear resection when managing our patient due to the appendiceal intussusception.

Ethics

Informed Consent: Consent form was filled out by the patient.

Peer-review: Internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: S.A.G., G.P., A.G., Concept: S.A.G., G.P., E.K., Design: A.G., N.Z.U., Data Collection or Processing: S.A.G., G.P., Analysis or Interpretation: S.A.G., G.P., N.Z.U., Literature Search: A.G., T.Ş., Writing: G.P.

Conflict of Interest: No conflict of interest was declared by the authors.

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