

Acquired Diverticulosis of the Vermiform Appendix: A Rare Case Report

Saeedeh Hosseini¹, Nakisa Niknejad², Arash Dehghan², Nasim Niknezhad³, Sorena Hedayati²

¹ Payambar-Azam Hospital, Hormozgan University of Medical Sciences, Qeshm, Hormozgan, Iran

² Department of Pathology, Besat Hospital, Hamedan University of Medical Sciences, Hamedan, Iran

³ Skin Research Center, Shohada-e Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran

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Abstract- Diverticulosis of the appendix, as a rare and incident disorder, mimics acute or chronic appendicitis and is characterized by herniation of the appendiceal mucosa through the muscular wall. Symptom and laboratory data of diverticular disease usually represent chronic inflammation. In this study, a 43-year-old female with a history of right lower quadrant pain and anorexia represented abdominal tenderness and rebound tenderness in the physical examination and normal laboratory tests. Abdominal sonography did not show any evidence of acute appendicitis. The removed appendix was 12 cm in length and had multiple diverticular protrusions along with it. The histologic examination showed diverticulosis without evidence of inflammation. The patient was discharged two days later in optimal clinical condition. Diverticulosis of the appendix often is confused with acute or chronic appendicitis based on similar presenting symptoms and imaging studies. Although surgery is the definitive treatment of both conditions, an appropriate diagnosis of diverticular disease before surgery is very important because of the association of appendiceal diverticular disease with neoplasm and other complications.

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Introduction

Diverticulosis of the appendix (DA) is a rare disease with a global incidence between 0.004-2.1% of all appendectomies (1,2). Most cases of appendiceal diverticular disease are incidentally identified during operation or pathological examination (3-5). Its symptoms are similar to and often mistaken for those of early acute or chronic appendicitis (1,2,6). The preoperative images are not so effective in detecting an appendicular diverticulum because their utility is highly dependent on the skills of technicians and radiologists. Typically, it may result in complications like perforation, peritonitis, abscess, and pseudomyxomateritonei (1,7). In rare cases, diverticular disease of the appendix can be a clue to the diagnosis of an underlying neoplasm (8). Here, we describe a case of DA without any inflammation from Iran.

Case Report

The 43-years-old woman presented with a history of right lower quadrant abdominal pain for one day. The pain was continuous and with no radiation and no aggravating or relieving factors. There was no history of nausea and vomiting. The patient was afebrile during the examination. Abdominal examination revealed tenderness and rebound tenderness in the right iliac fossa. No mass was found on abdominal palpation. Laboratory reports showed a total leukocyte count of 8500 (106/ μ L) with 65% lymphocytes on the differential count, and C-reactive protein (CRP) was negative. In abdominal sonography, acute appendicitis was not observed. Based on history, clinical examination, and laboratory investigation, a provisional diagnosis of acute appendicitis was made, and an appendectomy was performed.

The removed specimen was 12 cm in length and had multiple diverticular protrusion through its length (Figure 1). The specimen was submitted totally. The histological examination shows appendix and

Corresponding Author: N. Niknejad

Department of Pathology, Besat Hospital, Hamedan University of Medical Sciences, Hamedan, Iran
Tel: +98 8132651515, Fax: +98 2142910703, E-mail address: dr.nakisa_niknejad@yahoo.com

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Acquired diverticulosis of the vermiform appendix

diverticulosis without evidence of inflammation or malignancy (Figure 2). The patient was discharged two days later in optimal clinical condition.



Figure 1. Multiple diverticular protrusion through the appendix

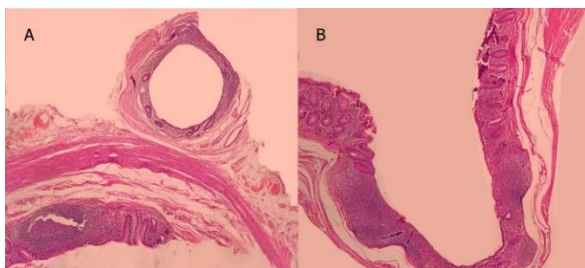


Figure 2. (A, B): Diverticulosis without evidence of inflammation

Discussion

DA is a rare condition and is classified as congenital and acquired (9). The congenital diverticulum has full layers and is hardly perforated, but the acquired form is pseudodiverticulum, which explains its mechanical weakness (10).

The disease is more common in males and usually is accompanied by previous pain attacks. The mean presentation age DA is higher than appendicitis. The acquired DA cases are mostly multiple and found on the mesenteric border; however, the congenital form is mostly single and on the antimesenteric border (7).

DA has four variations: 1) non-inflamed appendix with diverticulitis, 2) both appendicitis and diverticulitis, 3) appendicitis with a non-inflamed diverticulum, and 4) non-inflamed appendix with non-inflamed diverticulum (11). Although type 1 is the most common type, our case presented with diverticulosis with no evidence of diverticulitis or appendicitis (type 4). Among known risk factors of acquired appendiceal diverticulosis such as male sex, history of cystic fibrosis or Hirschsprung disease, and age over 30-year-old, our patient only has the age criterion (9).

The pathogenesis of DA is not completely identified. Acquired diverticula probably arise from sustained contraction of the appendix behind an obstruction, leading to luminal distension, inflammation, and

perforation. Sources of obstruction may be inflammation, fecaliths, calculi, neoplasm, *etc.* (1). Diagnosis of DA is mostly based on clinical evaluation. While both abdominal CT and ultrasonography have been shown to aid in the differentiation of diverticular disease and acute appendicitis, the usefulness of both studies is limited by the radiologist's experience (1,2).

Accurate diagnosis and prophylactic appendectomy in asymptomatic appendiceal diverticulosis are important because of the higher risk of complications such as perforation (4 times more than acute appendicitis), massive gastrointestinal tract hemorrhage, abscesses, pseudomyxomaperitonei, and associated appendiceal neoplasm (2,9). In this report, according to the study of Marc *et al.*, all specimens were submitted totally due to the association of the appendiceal diverticular disease with neoplasm and other complications, in addition to routine sections of passages of the appendix (8).

Although the choice of appropriate treatment in appendicitis and diverticulosis is the same and is an appendectomy, due to the association of complications, an accurate diagnosis of diverticulosis is necessary.

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