

# A Rare Cause Of Acute Abdomen: Acute Appendicitis Due To Appendicular Diverticula Perforation

Nadir Bir Akut Batın Nedeni: Apandiküler Divertikül Perforasyonuna  
Bağlı Gelişen Akut Apandisit Olgusu  
CERRAHİ TIP BİLİMLERİ

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## Özet

Apandiküler divertikülit, klinik olarak akut apandisit benzer çok nadir bir durumdur, ancak perforasyon ve komplikasyon riski daha yüksektir. Kesin tanı genellikle histoloji ile konur. Apandiküler divertikül perforasyonuna bağlı akut apandisit olgusunu sunuyoruz.

**Anahtar kelimeler:** *Divertikül perforasyonu, Apandiküler divertikülit, Akut apandisit*

## Abstract

Appendicular diverticulitis is a very rare condition that is similar to the acute appendicitis clinically, but the risk of perforation and complications is higher. The definitive diagnosis is often made by histology. We report a case of acute appendicitis due to appendicular diverticulum perforation.

**Keywords:** *Diverticulum perforation, Appendicular diverticulitis, Acute appendicitis*

## Introduction

Acute appendicitis accounts for 25% of hospital admissions due to acute abdominal pain.<sup>1</sup> Real or congenital appendicular diverticula is extremely rare and fewer than 50 cases have been reported in the literature.<sup>2</sup> Acquired pseudodiverticula or pulsation diverticula has an incidence ranging from 0.4% to 2.8% and is formed by mucosa and submucosa herniation through a defect in the muscular layer, similar to the diverticulosis of the large intestine.<sup>3</sup> Therefore, the risk of acquired diverticula perforation is higher.

As clinical symptoms, chronic right lower quadrant abdominal pain or acute appendicitis and even acute peritonitis can be seen in appendicular diverticula. Chronic inflammatory changes affecting the appendicular wall around have been confirmed by histological examination. Appendicular diverticulosis requires special attention due to the difficulty of preoperative diagnosis, the development of possible complications, and its frequent relationship with appendiceal neoplasm. Prophylactic appendectomy is recommended for asymptomatic cases diagnosed incidentally during surgery or radiologically.<sup>4</sup>

In this study, we presented one of the rare causes of acute abdomen, which is acute appendicitis due to appendicular diverticulitis.

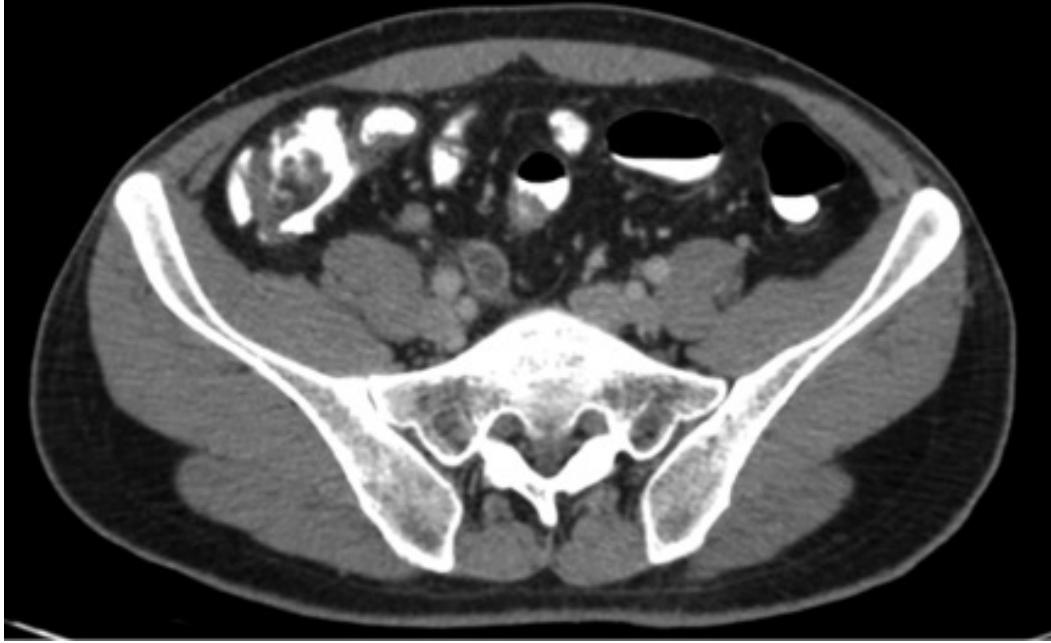
## Case Report

A 33-year-old male patient was admitted to our emergency surgery clinic with the complaint of abdominal pain for a week and with the expression of an increase for the last 3 days. Also, the patient who complained of nausea did not have weight loss, and any change in bowel habits. His medical history did not have any other illness, smoking, and alcohol. No previous history of surgery. On examination, tenderness was detected in the right lower quadrant.

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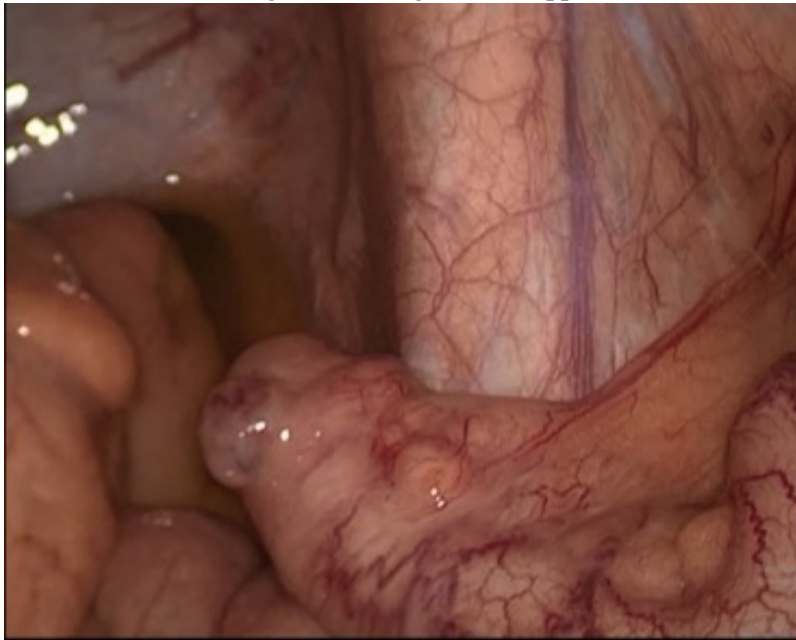
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Abdominal ultrasonography revealed inflammation of the appendix with a diameter of 8.5mm. Laboratory studies demonstrated white blood cell count of 10000 cells/ $\mu$ l and the C-reactive protein level was 10 mg/L. Abdominal computed tomography (CT) was taken to the patient and in CT scan, appendiceal inflammation was detected compatible with acute appendicitis (Figure 1) and the patient was operated. In the operation, a mucinous cystic structure was observed proximally to the appendix (Figure 2).



**Figure 1**

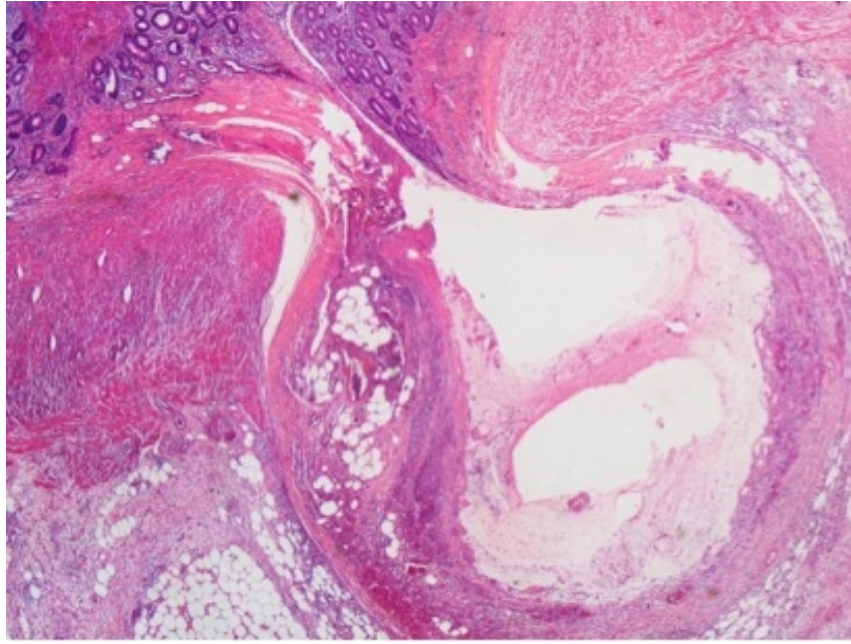
CT image is showing swollen appendix



**Figure 2**

A mucinous cystic structure proximal to the appendix during the operation

A laparoscopic appendectomy was performed. Postoperatively, the patient was sent to the surgical ward and discharged on the first postoperative day. As a result of pathology, diverticulum development and perforated diverticulitis were detected proximal to the appendix (Figure 3).



**Figure 3**

Budding- $\gamma$ -like lesion protruding from the appendiceal wall is seen (H&E X20).

## Case Discussion

Appendicular diverticulitis is an extremely rare condition and difficult to distinguish clinically and radiologically from acute appendicitis. Diverticula of the vermiform appendix were first described by Kelynack in 1893.<sup>5</sup>

The appendicular diverticula may be associated with colonic diverticula, be single or multiple, and can occur along the entire length of the organ.<sup>6</sup> In our case, no diverticula was detected in other parts of the colon in the CT scan. Although the diverticulosis of the appendix is characterized by occasional, self-regressive pain in the right iliac fossa, most of the case does not show any symptoms until acute inflammation occurs as a result of the facilities effect.

It is reported that complications such as peritonitis, lower gastrointestinal bleeding may develop after perforation of appendix diverticula.<sup>3,4</sup> Acute appendicitis-related picture can be detected due to diverticular inflammation. It is possible to diagnose these cases with a CT scan and surgical excision is recommended due to the possibility of perforation. In this case, perforated diverticulitis was detected in the pathology specimen.

Since appendix diverticulum is a rare condition, the rate of malignancy is uncertain. Dupre et al. retrospectively screened 23 patients with appendix diverticulum and found that 48% of these patients were accompanied by appendix neoplasms. They have found that appendix diverticula are associated with mucinous neoplasms, tubular adenoma, mucinous adenoma, adenocarcinoma, pseudomyxoma peritonei, and neuroendocrine tumors.<sup>7</sup> Due to this relationship, despite the image resembles normal acute appendicitis, the surgeon is recommended to follow the pathology result.

If an appendicular diverticulum is detected during surgery, the clinician is advised to conduct an examination of the abdominal cavity in detail. Furthermore, if there is incidental radiologically proven appendix diverticulum, some authors recommend elective resection due to the risk of bleeding, perforation, and neoplasm.<sup>4,8</sup> In previous studies, the incidence of perforation in appendiceal diverticulitis has been demonstrated to be four times higher than in normal acute appendicitis.<sup>9</sup>

Although acute diverticulitis of the appendix is one of the rare causes of acute abdomen and difficult to diagnose preoperatively, clinicians should be more careful, considering that there is an earlier and higher incidence of perforation and a higher mortality rate than acute appendicitis. Another important point to remember about appendicular diverticulosis is malignancy development potential. Therefore, appendiceal diverticulitis should be considered in the differential diagnosis in adult men with chronic right lower quadrant pain.

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