causapedia
hakemli olgu dergisi

e-ISSN:2147-2181

A rare Acute Abdomen: Appendix Duplication

Nadir Akut Karın Sebebi: Apendiks Duplikasyonu
Genel Cerrahi

Başvuru: 11.09.2017
Kabul: 02.01.2018
Yayın: 30.01.2018

Şahin Kahramanca[1], Turgut Anuk[2], Ali Cihat Yıldırım[3]

[1] Kars Devlet Hastanesi
[2] Kafkas Üniversitesi Tıp Fakültesi
[3] Kars Harakani State Hospital, General Surgery

Özet

Apendiks anomalileri, gastrointestinal sistemde, genellikle tesadüfen bulunan nadir görülen malformasyonlardandır. Apendiks vermiformis dublikasyonunun bildirilen insidansı %0,004'tür. Calota sınıflandırma sisteminde açıklanan olası yerler ve şekiller cerrahlar tarafından düşünülmelidir. Burada, acil laparotomi esnasında tespit edilen, apendiks vermiformis dublikasyonlu 24 yaşındaki erkek hasta sunulmaktadır.

Anahtar kelimeler: *Akut apandisit*, *Apendiks duplikasyonu*, *Acil cerrahi*

Abstract

Appendiceal anomalies are extremely rare malformations in the gastrointestinal system that are usually found incidentally. Appendix vermiformis duplex has a reported incidence of 0.004%. The possible locations and shapes described in the Calota classification system should be considered by surgeons. Here, we present a rare case of a 24-year-old male with appendix vermiformis duplex diagnosed during emergency laparotomy.

Keywords: *Acute appendicitis*, *Appendix duplication*, *Emergency surgery*

Introduction

Acute appendicitis (AA) is the most common non-traumatic emergency surgical pathology. The lifetime risk for the development of acute appendicitis in the general population has been reported to be 7% [1]. Clinically, AA is characterized by nausea and periumbilical pain initially beginning in the visceral phase, followed by appendix locus pain in the parietal phase. The appendix is localized posteromedially and is on the inferior ileocecal valve of the caecum in 65% of the population [2]. However, the position of the appendix may be para-ileal, post-ileal, promontory, pelvic, sub-caecal, paracolic and retro-caecal in 35% of the population [2]. Additionally, clinical differences can be noted depending on the congenital location and number of anomalies of the appendix. Here, we a patient with appendix vermiformis duplex diagnosed during emergency laparotomy. The two appendices had two different origins.

Case Report

A 24-year-old male was admitted to the emergency services with a complaint of abdominal pain 12 h previously. He was found to have defensive tenderness and rebound positivity at McBurney's point. On abdominal computed tomography (CT)scans, an 8-mm-diameter inflated appendix was observed. His white blood cell count was 15400/mm^3. On intraoperative exploration, an inflamed appendix measuring 1 cm in diameter and 8 cm in length was observed on the caecum 2 cm away from a non-inflamed appendix measuring 4mm in diameter and 3 cm in length. Appendectomy was performed for both appendices. On the third postoperative day, he was discharged without any problems. The patient was examined for congenital malformation of other intraabdominal organs, and no other malformation was detected. Intraoperative image of duplication of appendix and microscopic images of

Corresponding Author: Şahin Kahramanca, Kars Devlet Hastanesi Kars Devlet Hastanesi
drkahramancasahin@gmail.com

e-ISSN:2147-2181

both appendices are shown in the figures.

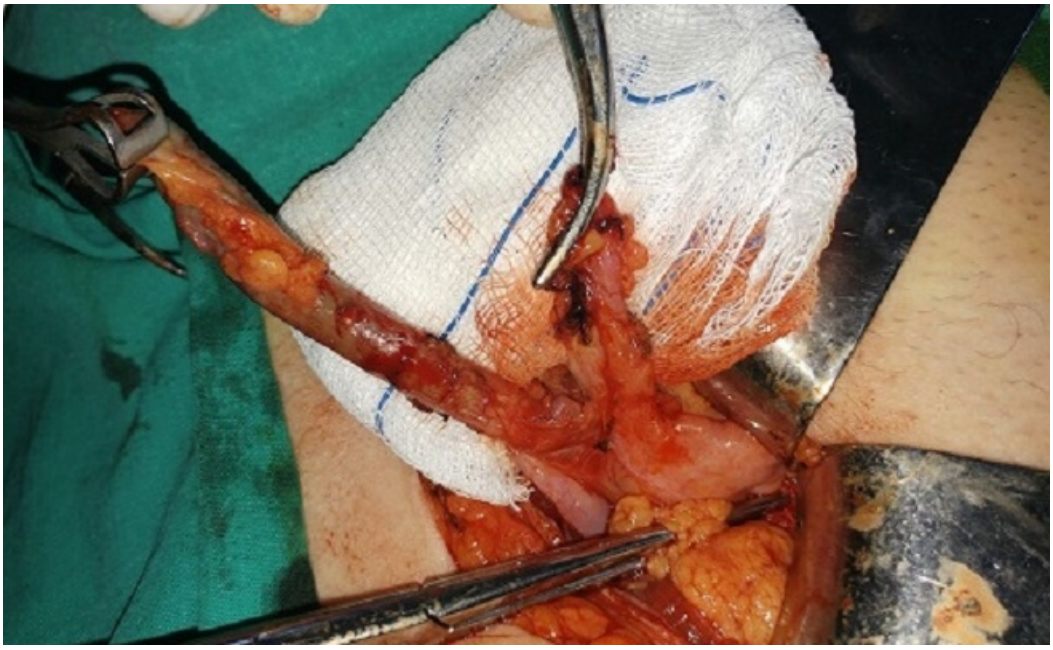

Figure 1
Intraoperative image of appendix duplication

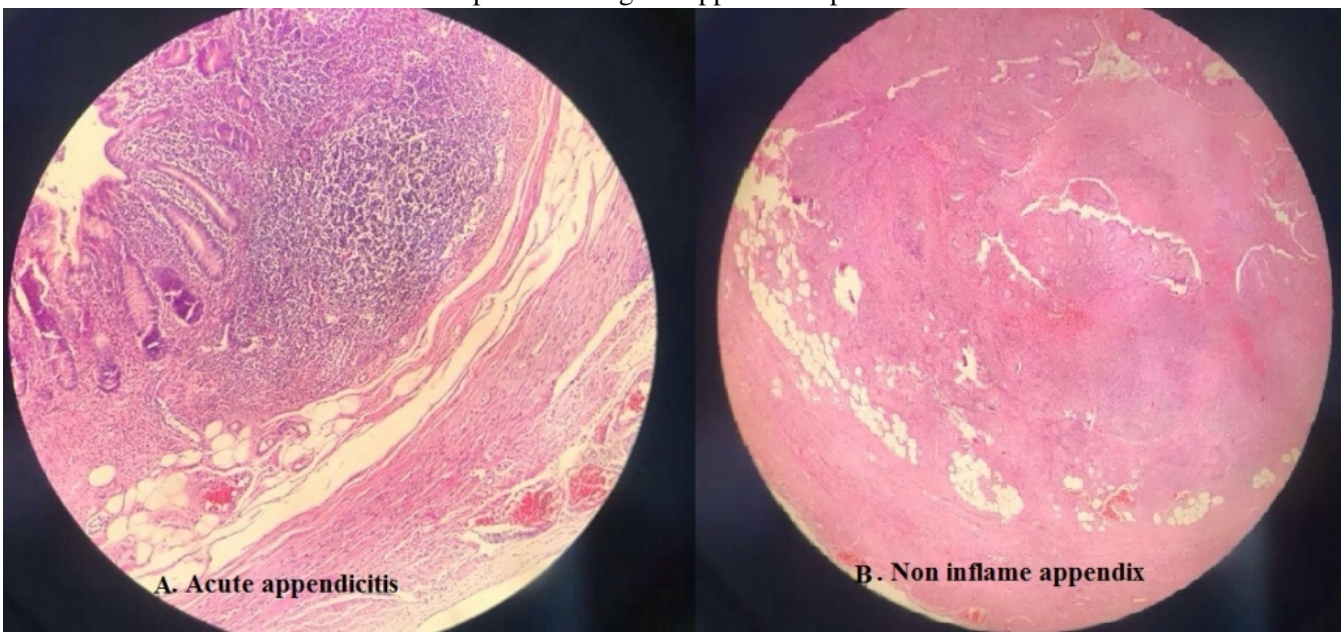

Figure 2
Microscopic images of both appendices

Case Discussion

Appendix duplication was first described by Picoli in 1892 in a female patient with a double uterus, double colon and double vagina [3,4]. In 1968, Tinckler's description of the double penis, double bladder and triple appendix revealed that appendiceal congenital anomalies can coexist with other abdominal organ congenital malformations [3]. Till now, fewer than 100 cases have been reported [5].

The aetiology of double appendix or horseshoe appendix is still unclear [6]. Collins reported an appendix

e-ISSN:2147-2181

duplication rate of 1 / 12,500 ageneses and 1 / 25,000 duplications in 50,000 appendices specimen, and Kjossev reported an appendix duplication rate of 1/10.956 [7,8]. A classification system for duplication was first developed by Cave in 1936 [9,10], and it was modified by Wallbridge in 1963 [11] and then by Biermann in 1993 [12]. A complete classification system was introduced by Calota et al [13]. This system classified anomalies according to the number and shape of anomalies.

Number Anomalies

1. Congenital agenesis
2. Multiforious appendices:

A: appendiceal duplication (partially) in “Y-shaped”

B: duplex appendix on a single cecum:

- B_1 - “avian type/bird-like ” with intestinal and/or genitourinary anomalies
- B_2- “taenia coli cecum type” without other anomalies
- B_3 - “taenia coli hepatic flexura type”
- B_4- “taenia coli splenic flexura type”

C: duplex appendix on two caeca with hindgut, genitourinary tract, lower vertebral column maldevelopment

D: triplex appendix:

- “new-born type” with/without other congenital anomalies
- “adult type” without other congenital anomalies

Shape Anomalies

Horseshoe-shaped appendix:

-with frontal disposal

-with sagittal disposal

According to the Calota classification system, the present case could be classified as type B2. In addition to a physical examination, ultrasonography (USG) and abdominal CT are used as gold standard diagnostic methods for AA. However, in appendix duplication, USG and CT are not very useful. Preoperative diagnosis of a duplicated appendix is not easy [14].The diagnosis is usually made intraoperatively or in the post-mortem autopsy. Two separate lumens can be very rarely seen in the barium graphite. Appendix duplication should be distinguished from a solitary diverticulum of the caecum and from appendiceal diverticulosis [15]. Treatment involves the excision of both appendices, in particular, to avoid medicolegal responsibilities. In our case, a single lumen was observed on performing abdominal CT and duplication was seen intraoperatively, as in general clinical practice. Two appendectomies were performed to avoid medicolegal problems.

In conclusion, we presented a rare case of appendix vermiformis duplex diagnosed during emergency laparotomy.

References

e-ISSN:2147-2181

1. Addiss DG, et al. The epidemiology of appendicitis and appendectomy in the United States. Am J Epidemiol. 1990; 132: 910-25.
2. Behzatoğlu B, et al. Comparison of ultrasonography and computed tomography findings in the diagnosis of acute appendicitis. Bakırköy Med Jour. 2006; 2: 22-4.
3. Bhat GA, Reshi TA, Rashid A. Duplication of vermiform appendix. Indian J Surg. 2016; 78(1): 63–4.
4. Dubhashi SP, et al. Double appendix. Indian J Surg. 2015; 77: 1389–90.
5. Bhat GA, Reshi ta, andRashid A. Duplication of vermiform appendix. Indian J Surg. 2016; 78(1) :63–4.
6. Singh CG, et al. Horseshoe appendix: An extremely rare appendiceal anomaly. J Clin Diagnostic Res. 2016; 10(3): 25-6.
7. Collins DC. A study of 50,000 specimens of the human vermiform appendix. Surg Gynecol Obstet. 1955; 101: 437-45.
8. Kjossev KT, Losanoff JE. Duplicated vermiform appendix . Br J Surg. 1996; 83: 1259.
9. Cave AJE. Appendix vermiformis duplex. J Anatomy. 1936; 70: 283-92.
10. Lim KH. Duplication of the vermiform appendix in an adult patient. Ann R Coll Surg Engl. 2014; 96: 16-7.
11. Wallbridge PH. Double appendix. Br J Surg. 1962; 50: 346-7.
12. Biermann R, Borsky D, Gogora M. Die appendicitis duplex-eine pathologische raritat. Chirurg. 1993; 64: 1059-61.
13. Calota F, et al. Horseshoe appendix: a extremely rare anomaly. Chirurgia (Bucur). 2010; 105(2): 271-4.
14. Bulut SP, Cabıoğlu N, Akıncı M. Perforated double appendicitis: Horseshoe type. Turk J Surg. 2016; 32: 134-6.
15. Yanar H, et al. The case of acute appendicitis and appendiceal duplication. Acta Chir Belg. 2004; 104(6): 736-8.

Information Presantation

11th National Trauma and Emergency Surgery Congress in 2017 in Turkey