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Case Report

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Both Inflamed Appendiceal Duplication, *Taeniae coli* B2 Type

Ahmet Barış DİRİM

Clinic of General Surgery, Balıklıgöl State Hospital, Şanlıurfa, Türkiye

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ABSTRACT

Duplex appendicitis is very rare (incidence 0.004%). Appendix duplication should be considered in the differential diagnosis of lower abdominal pain even if the patient has had previous appendectomy surgery. Surgeons should be aware of the potential anatomical variations of the vermiform appendix, and the retrocecal space should be carefully examined during laparotomy or laparoscopic exploration. Missing appendix duplication can lead to treatment failure and medico-legal consequences.

This is a case report of a 32-year-old female patient who was diagnosed appendicitis, and on open surgical exploration was found to have appendiceal duplication.

Keywords: Appendix, duplication, misdiagnosis

ÖZ

Her İkisi de İnflame Olan Duplike Apendiks, *Taeniae coli* B2 Tip

Apendiks duplisitesi nadir rastlanan bir klinik durumdur (insidans %0,004). Alt karın ağrısı kliniği olan hastada, özellikle apandisit ameliyatı geçirmişse ayırıcı tanıda göz önünde bulundurulmalıdır. Cerrahlar apendiks vermiformisin anatomik varyasyonlarının farkında olmalı, laparotomik ya da laparoskopik cerrahi esnasında retroçekal alanı da dikkatlice değerlendirmelidir. Gözden kaçırılan apendiks duplisitesi tedavinin başarısız olması ve mediko-legal sorunlarla sonuçlanacaktır. Bu vaka sunumu apandisit tanısı konulan 32 yaşındaki bayan hastanın açık cerrahi esnasında apendiks duplisitesi saptanmasıyla ilgilidir.

Anahtar Kelimeler: Apendiks, duplikasyon, yanlış tanı

INTRODUCTION

The diagnosis of duplex appendicitis may be missed in radiological imaging. In our daily surgical practice, it is not common for patients who have previously undergone appendectomy to have another appendix and become infected. In similar clinical situations, a diagnosis of appendiceal stump inflammation can be made (1).

In 1982, Picoli reported the first case of appendiceal duplication (2). In 1936, Cave published the classification of appendiceal duplication, which was later modified by Wallbridge in 1963 (Figure 1) (3,4).

The following is the presentation of a patient who was diagnosed with appendicitis by physical and radiological examination and decided for open surgery.

CASE PRESENTATION

A 32-year-old female patient presented with abdominal pain ongoing for two days. On physical examination, there was right iliac fossa tenderness and guarding localized at McBurney's point. White blood cell count was mildly high, and C-reactive protein

Corresponding Address

Ahmet Barış DİRİM

Clinic of General Surgery,
Balıklıgöl State Hospital,
ŞANLIURFA-TÜRKİYE
e-mail: drbarisdirim@yahoo.com

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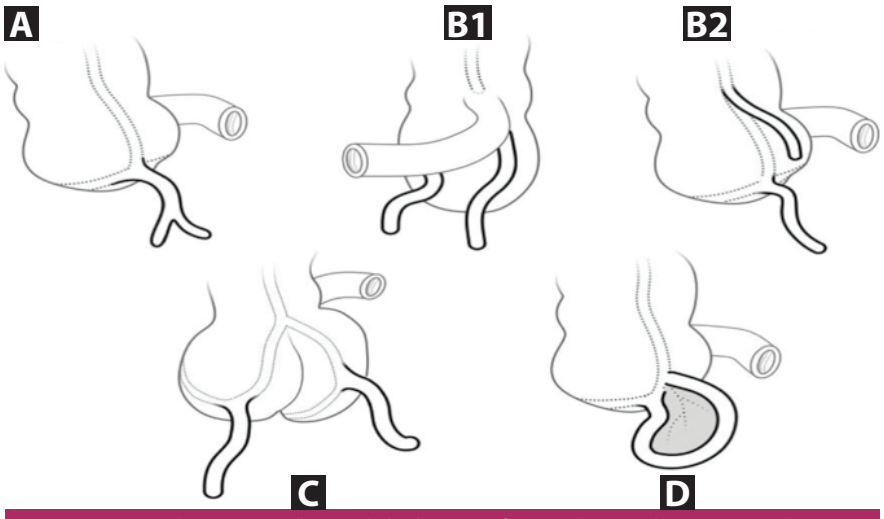

Figure 1. A) Single cecum with partial duplication of appendix **B1)** The wo appendixes arise on either side of the ileocecal valve in a "bird like" manner **B2)** *Taeniae coli* type, in addition to a normal appendix arising from the caecum at the usual side, there is also a second, usually rudimentary, appendix arising from the caecum along the lines of the taenia at a varying distance from the first **C)** Duplication of the caecum and appendix **D)** Horseshoe type, one appendix has two openings in the caecum.

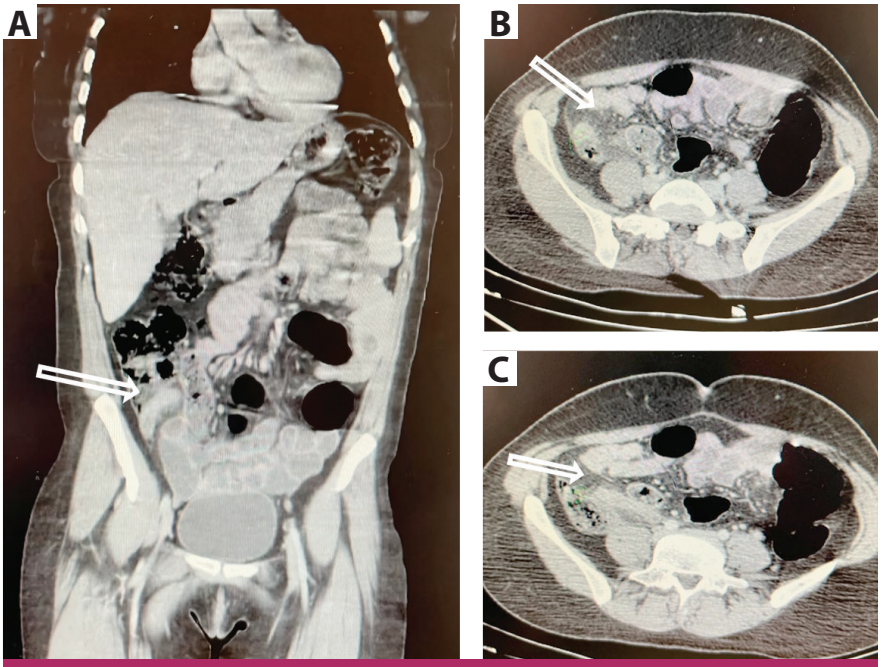

Figure 2. Contrast enhanced abdominal tomography of the patient showed fatstranding of the pericaecal tissue and inflamed appendix.

level was increased. Contrast enhanced abdominal tomography of the patient, whose abdominal ultrasonography (US) could not be performed because there was no on-call radiologist at night shift, showed fat stranding of the pericaecal tissue and inflamed appendix (Figure 2).

Open appendectomy with McBurney incision was performed on the same day of emergency admission. Intraoperative findings included an inflamed appendix and mild quantity of seropurulent fluid collection in the right iliac fossa. Surprisingly, another thin, inflamed appendix was visualized on the blunt dissection. Both appendixes were

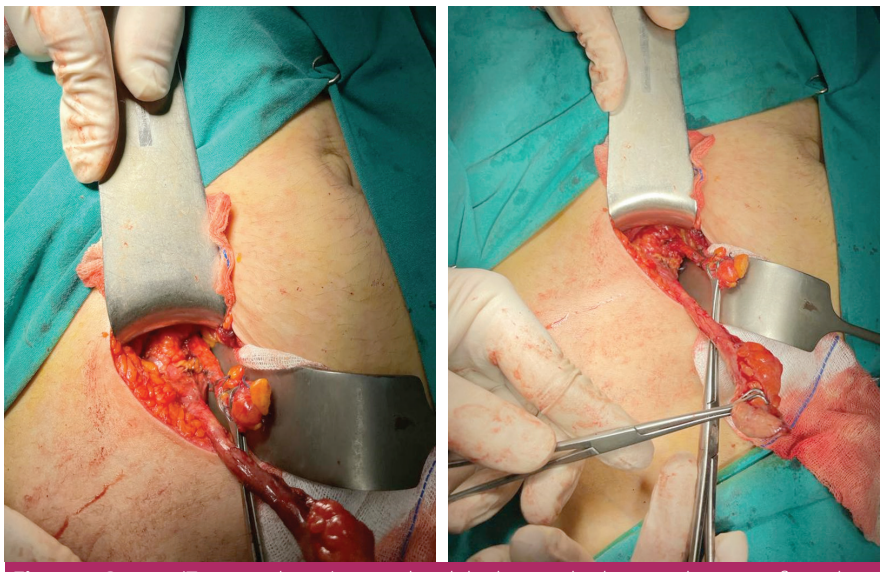

Figure 3. B2 type (*Taeniae coli* type) appendiceal duplication, both appendixes are inflamed.

ligated separately at their bases, and appendectomy was performed.

According to the Cave-Wallbridge classification, this case presented a B2 type (*Taeniae coli* type) appendiceal duplication. The main appendix was arising from the caecum at the usual site and the second one was arising approximately 5 cm distance along the line of the taenia from the main one (Figure 3).

The patient had an uneventful recovery and was discharged on postoperative day two. Histopathological examination of the surgical specimens of both resected appendixes confirmed the identical features for appendicitis clinical features.

DISCUSSION

It is difficult to diagnose appendiceal duplication by physical examination and radiological imaging. Even if there is rebound tenderness localized to the right lower quadrant as a physical examination finding, it will not be sufficient to confirm the diagnosis of appendiceal duplication. Likewise, even if findings specific to the diagnosis of appendicitis are obtained on abdominal US, the diagnosis of duplication will often be missed. Although computed tomography (CT) is considered the best imaging method, CT often fails to make a diagnosis (5).

In type B2 duplication, which is the most common variation, diagnosis is more difficult because the appendix is mostly located retrocecally, as in the case presented here (6). Type B2 duplication can also be mimicked by cecal diverticulitis or epiploic appendicitis (7).

When a pelvic or anteriorly located appendix is detected, and if there are signs of inflammation along the right paracolic space, careful examination of the retrocecal space and cecal pole should be performed again and again because this inflammation may be a sign of the presence of a second appendicitis (8). In general, during open appendectomy performed with McBurney incision, comprehensive evaluation of the surgical area is insufficient and exploration of the retrocecal area cannot be performed by routine cecal mobilization. Today, it is predicted that awareness of appendiceal duplication will increase with the more frequent use of diagnostic laparoscopy (9).

In our opinion, the present case is valuable in that both appendices were inflamed, and it could be diagnosed in open surgical diagnostic exploration.

CONCLUSION

When all surgeons encounter an inflamed or normal appendix along the right paracolic gutter or in the presence of a suspected right lower abdominal pain clinic in a patient with previous appendectomy surgery history, they should consider the clinic of appendiceal duplication. If clinically necessary, the cecal pole and retrocecal space should also be evaluated to avoid misdiagnosis.

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