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CASE REPORT

Vermiform appendix duplex: A case report

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INTRODUCTION

Double appendix or vermiform appendix duplex, where two appendices originate from distinct sites of the cecum, is exceptionally rare, documented initially in fetal studies in 1867 and later in adult studies in 1892.[1] Its prevalence is estimated at 1 in 25,000 cases.[2] Diagnosis may occur incidentally through imaging or present with acute abdomen, necessitating surgical exploration. The Cave-Wallbridge classification categorises various types of duplicate appendix presentations.[3] Vermiform appendix duplex is clinically significant due to potential complications like recurrent appendicitis or acute abdomen,[2] posing medicolegal challenges for surgeons. Understanding its implications is crucial for effective patient management and legal considerations. This case report presents a rare case of appendix duplex found in Bangladesh.

CASE DESCRIPTION AND MANAGEMENT

A 40-year-old Bangladeshi patient was admitted at an Upazila level clinic named Araihazar Central Hospital Pvt. Ltd. with a history of pain in the right iliac fossa for five days, which was increasing in intensity with time. Her pain was associated with nausea, anorexia, and spiking fever. The patient was hemodynamically stable on examination with increasing pulse and normal temperature. On local examination, the abdomen was soft in all quadrants except the right lumber and right iliac quadrants. Muscle guarding was present on the right lumber and iliac fossa with severe tenderness.

LEARNING POINTS

1. Double appendix is rare, mostly found incidentally in humans.
2. Identifying such cases is very important for patient safety and surgeons' legal concerns.
3. It poses challenges to the surgical teams, which they should remember before starting the surgery.

McBurney's point was tender, rebound tenderness was present, and Robsing's sign was positive. Bowel sound was sluggish. Other systemic examinations were normal. Therefore, the provisional diagnosis was appendicular abscess. Some biochemical tests and imaging were done. Total white blood cell count was raised (17, 800/mm^3) with high neutrophilia (89%), and high erythrocyte sedimentation rate (90 mm in 1st hour). Urine had pus cells (8-10/HPF) along with plenty of epithelial cells. Other biochemical indices were normal. Ultrasonography was suggestive of acute appendicitis. We decided to have an emergency operation.

Purulent collections came out after we opened the peritoneal cavity. All collections were sucked out. An inflammatory lump was found with caecum upwards at the lumber region with surrounding omentum and small guts, perforated appendix, and mesoappendix. The wound was extended by achieving a Rutherford muscle cutting incision for proper exposure to reach the lesion and delineate the anatomy properly. Blunt finger and sucker dissection was done to achieve adhesiolysis and to simplify the bizarre anatomy. The tip was

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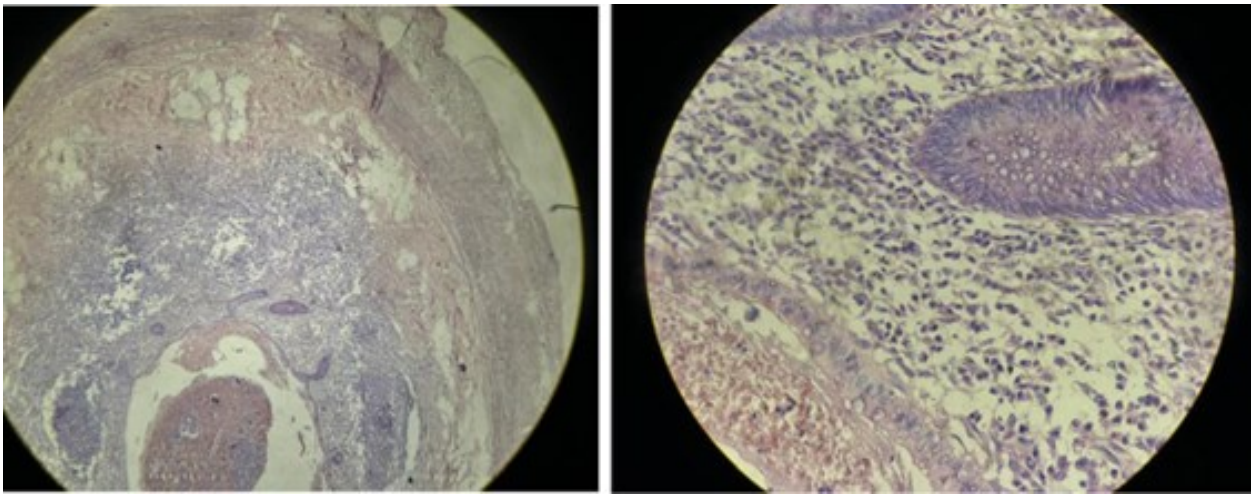

FIGURE 1 Histological slides of two different specimens showing appendix tissue

adherent upwards along with an ascending colon and small gut, and perforation was present from the body of the gangrenous appendix towards the base of the appendix. Fecolith was licking through the perforated part. Mesoappendix was gangrenous and sloughed out. After gradual meticulous dissection, a gangrenous perforated appendix with surrounding matted tissue came out in 3 parts. Several tiny vessels were ligated. After removing the slough and necrotic tissues, the base was identified on the caecum near the ileocecal junction. Pursting sutures were applied in two layers to ligate and close the base. A thorough inspection was done to identify the ileocecal junction. During that time, another appendix was identified just below the Ileocecal junction, which was inflamed with quite a normal appearance. Appendicectomy was done after ligation of the appendicular artery along with mesoappendix to prevent further dilemma. After peritoneal toileting and moping, an 18 Fr drain was placed at the pelvis, and the wound was closed in layers. Both the specimens were preserved separately and sent for evaluation of diagnosis. Later, histological examination confirmed both individual specimens to have microscopic appendix features (**FIGURE 1**).

DISCUSSION

According to the Modified Cave-Wallbridge classification,[4] the duplicate appendix, in this case, was classified as a Taenia coli-type (type B2), with one appendix in the usual location and the other located further along the Taenia coli. Type B2 duplications, as reported in 37% of cases, are often associated with acute appendicitis.[5] While identifying duplicate appendices, it is crucial to rule out other gastrointestinal or vertebral anomalies.[1, 6] However, type B2 duplications are not typically associated with such congenital conditions.[7]

Diagnosing duplicate appendices presents challenges, as they may evade detection through physical examination and imaging modalities such as CT scans, particularly with retrocecal placement complicating type B2 duplication diagnoses.[8] In resource-limited settings like rural Bangladesh, where access to CT scans is limited, diagnosis often relies on intraoperative findings. Delayed recognition of a second appendix can lead to diagnostic and legal complications,[9] with a risk of leaving behind a source of sepsis,[10] underscoring the importance of thorough exploration during surgery.

In conclusion, managing vermiform appendix duplex poses unique challenges and has important implications for surgical practice. Understanding these complexities is essential for providing optimal patient care and navigating potential legal considerations.

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Author contributions

Manuscript drafting and critical revision: GDP, SMS, TJN, NI. *Approval of the final version of the manuscript:* GDP, SMS, TJN, NI. *Guarantor of accuracy and integrity of the work:* GDP.

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Conflict of interest

We do not have any conflict of interest.

Ethical approval

Ethical approval was not sought because this is a case report. However, informed written consent was obtained from the patient for preparation of this manuscript.

Data availability statement

We confirm that the data supporting the findings of the study will be shared upon reasonable request.

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