

**REPORT CASE OF APPENDICITIS WITH APPENDICULAR DUPLICATION:
A RARE ANOMALY, NOT TO BE OVERLOOKED!**

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ABSTRACT

The appendicular duplication is a unique clinical situation, with a limited number of reported cases in the literature. The Knowledge of the variations in the characteristics and positioning of the appendix is important to surgeons. The diagnosis of appendicitis remains clinical, requiring a mixture of clinical observation, surgical sense associated to radiology imaging with laboratory tests. The objective of this study is to present this anomaly and remind surgeons of its existence. A 17-year-old male patient diagnosed with appendicitis was operated on using a medial mini-laparotomy and two appendices emerging from the caecum were found. Our case was classified as type B1 according to Cave-Wallbridge classification, which is the most frequent. Although very rare, every surgeon must be aware and watchful of this anomaly. Missing a second appendix could be the cause of further complications and a source of medico legal issues.

Keywords: Appendectomy; Appendicitis; Appendicular duplication.

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INTRODUCTION

The appendicular duplication is an unusual clinical condition first described by Piccoli in 1982 [1-2]. About 100 cases have been reported in the literature (0.004% of all appendectomies) [1-3]. The objective of this case report is to highlight this anomaly and remind surgeons of its existence.

REPORT CASE

A17 year-old patient was admitted to the emergency room with symptoms consisting of abdominal pain, vomiting, diarrhea and fever. The physical examination revealed a painful mass on the right iliac fossa. The diagnosis of appendicular plastron was retained on the basis of clinical examination and CT scan findings (**Figure 1**).



Figure 1: Abdominal CT scan image showing the appendicular plastron

Antibiotics were then started. Because of the absence of clinical improvement, surgery was indicated. After medial mini laparotomy, a small quantity of purulent fluid was aspirated and after adhesiolysis, two appendixes were revealed emerging from the caecum. They both had a distinct implantation base, one was necrotic and the other thickened (**Figures 2 and 3**).



Figure 2: Per-operative image showing the appendicular duplication type B1 according to Cave-Wallbridge classification.



Figure 3: Per operative image of two distinct appendicular stumps

A double appendectomy was performed with a separate treatment of every stump. Post-operative follow-up was uneventful and the patient was discharged from the hospital 3 days after surgery. The histological examination confirmed the existence of the appendix on both specimens (**Figure 4**).

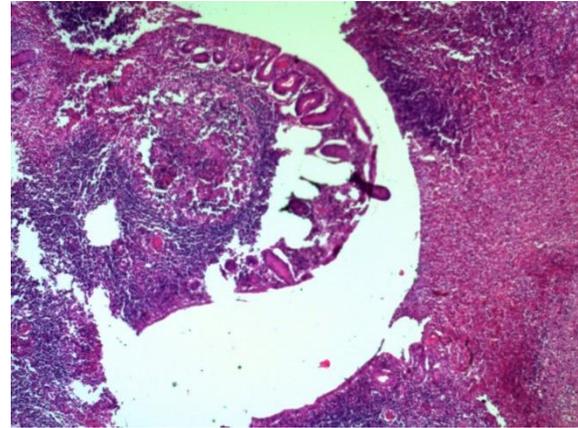


Figure 4: The Anatomic pathology image confirming the existence of the appendix on both specimens.

Our case is well classified as type B1 according to the classification of Cave-Wallbridge classification [4] (**Figure 5**).

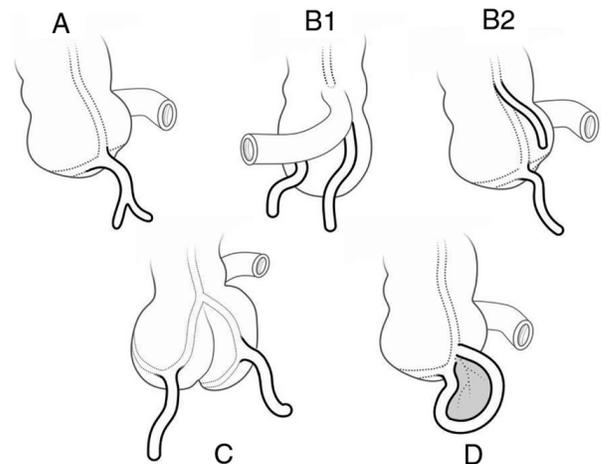


Figure 5: Cave-Wallbridge Classification

DISCUSSION

Appendicular duplication was first described by Piccoli in 1982 [1-2]. It is predominantly found among males with a ratio of 2.14/1. Average age is 32.36 years old, upon exploiting published articles since 1945.

The appendix develops during the 5th week of the fetal stage from a bud at the junction of the small and large bowel and rapidly grows into a pouch. The proximal end of this pouch, which has appeared to be an insignificant structure, starts growing differentially after the fifth month of the fetal stage, forming the true caecum that continues to develop [5]. Although embryogenesis of the appendix is known, the pathogenesis of appendicular duplication is undefined.

Four theories are suggested to explain the embryology of gastrointestinal duplications: the theory of split notochord, failure of a normal regression of the embryonic diverticula, the genesis of a median septum and a partially twinning procedure [6]. None of the mentioned theories completely explains the embryology of appendix duplication. Nevertheless, two theories were suggested by Cave: supernumerary appendix due to persistence of a transient embryological structure and appendiceal duplicity incidental to a general anomaly of the primitive midgut [7]; these two theories may help explain some types, but not all.

Like in our case report, the B type of Wallbridge classification is the most frequent [8]. The types A and C appear more frequently during the infant age, while the types B and D are more seen during adulthood. This raises the importance of caecal mobilization in some cases with a potentially duplicated appendix, due to the likelihood of finding a second one hidden as in Type C. The treatment is surgery by an appendectomy, either through a laparoscopy or through a laparotomy [9].

Variations in the characteristics and positioning of the appendix are common; however, a unique difference such as a duplication or an absence of this organ is sufficiently interesting to warrant a publication.

CONCLUSION

Although very rare, every surgeon must be aware and watchful of this anomaly. Missing a second appendix could be the cause of further complications and a source of medico legal issues.

CONFLICT OF INTEREST:

The authors declare that there is no conflict of interest. No financial support was provided for the authors.

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