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Duplicated Vermiform Appendix - Extremely Rare Anomaly: A Case Report.

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ABSTRACT

Duplication of appendix is extremely rare anomaly. The reported incidence is 0.004–0.009%. This was observed during routine dissection of undergraduate students in the department of Anatomy Krishna institute of medical sciences Deemed University, Karad (Maharashtra). We have found "duplicated appendix". During routine dissection of undergraduate students we have found a duplicated appendix in male cadaver. We studied the morphology and morphometry of appendix and have reported these appendiceal anomalies. In our study duplicated appendix found which was pelvic and midinguinal position. Appendiceal duplication although rare and difficult to diagnose preoperatively, should be checked while operating for appendicular pathology in order to avoid serious clinical and medicolegal implications. Therefore surgeons in emergency services should be aware of duplication and malposition of the appendix.

Key words - appendiceal anomalies, duplicated appendix.

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INTRODUCTION

Vermiform appendix is a narrow, worm shaped tube, and arises from the postero-medial wall of the caecum, 2 cm or less below the end of ileum. It varies from 2 to 20 cm in length, the average being about 9 cm [1].

The vermiform appendix present only in human being,. In certain Anthropoids apes and the wombat (a nocturnal, burrowing Australian marsupial) was probably first noted as early as the Egyptian civilization (3000 B.C.). [2].

Aetiology of the double appendix is explained by many workers. Kelly and Herdon (1905) considered it to be persistence of a transient appendix appearing in the 10 mm embryo which normally atrophies. Mitchell (1905) (quoted by Wallbridge) stated it to be a phylogenetic reversion to paired caecal arrangement found in birds. Jones (1912) (quoted by Gupta and Kak) believed that the premaminalian caecum was a paired structure which led to obliteration of one caecum in the greater specialization of mammals.[3]

Case presentation

Cadavers allotted to undergraduate medical students, selected for research work. The dissections had done in the Department of Anatomy, at Krishna Institute of medical sciences, Deemed University, Karad. During dissection, we got a “duplicated appendix” of Type B variety as per classification in male cadaver. The following parameters and photographs were taken.

Appendix localized in the right iliac fossa and the base is located 2 cm below the ileocaecal junction. Each appendix has its own meso-appendix (Fig. 1). The Common blood supply which is derived from appendicular artery branch of ileocolic artery (Fig.2).

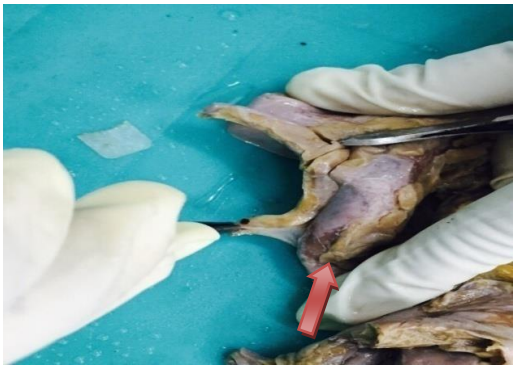

Figure 1: Meso-appendix

Figure 2: Arterial supply (common)

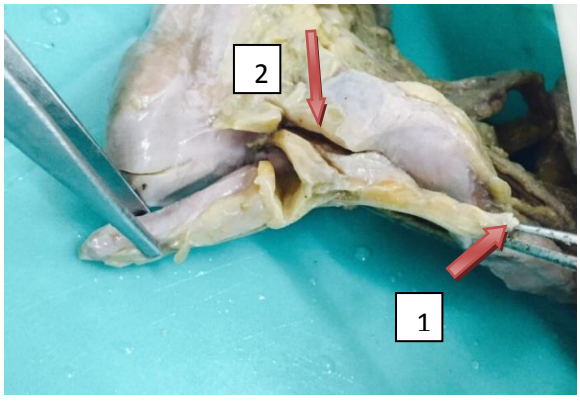

Figure 3: Duplicated appendix

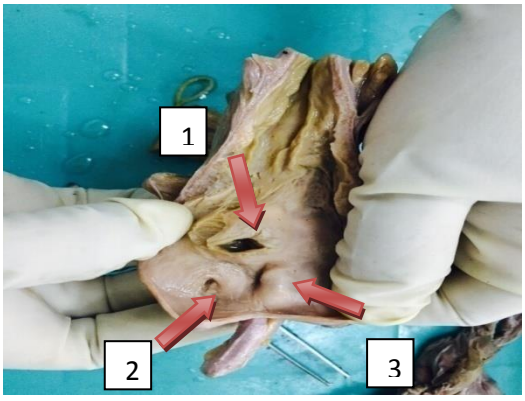

Figure 4: Interior of caecum

Figure 4: Interior of caecum shows 1.Ileoceacal orifice; 2.Appendicular orifice; 3.Blind appendicular orifice.

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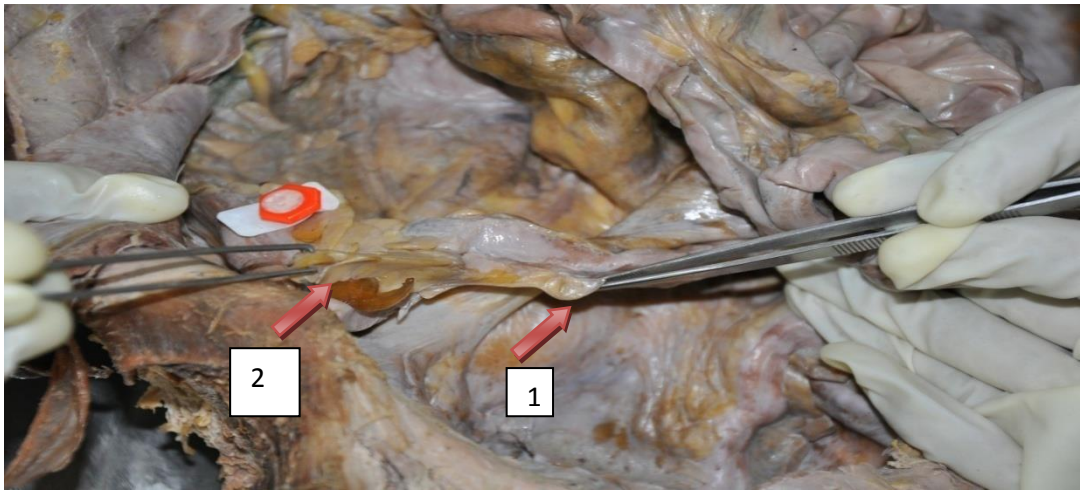

Figure 5: Position of tips of appendix 1) Pelvic 2) Midinguinal

The shape of caecum was adult type. Out of two appendix one was 4.2 cm in length and pelvic in position. The other appendix has length of 3.8 cm and was midinguinal in position .The breadth of appendix at base was 0.6 mm and from single caecum (Fig. 3).

The interior of caecum shows one ileocaecal orifice with valve ,one appendicular orifice with valve of Gerlach and one blind appendicular orifice.The distance of appendicular orifice to ileocaecal orifice was 1.6 cm. (From upper border to lower lip Fig. 4) . There was no associated other congenital anomalies.

DISCUSSION

Anomalies of appendix are extremely uncommon. Cases of complete agenesia have been reported only few times. Abnormal development of the appendix usually takes the form of a double appendix. Around 100 cases of appendiceal duplication have been reported in literature till now. Cave (1936) classified appendiceal duplication for the first time which was modified by Wallbridge in 1963 into three types. Type A consists of various degrees of partial duplication on a normally localised appendix with a single caecum. Type B consists of a single caecum with two completely separate appendices, divided into two further subgroups, type B1 where two appendices are located symmetrically on either side of the ileocaecal valve, resembling the normal arrangement in birds and termed 'bird-like type' and type B2 which has a normally located appendix arising from the caecum at the usual site and a second separate rudimentary appendix located along the line of one of the taenia and as such termed 'taenia-coli type'. Type C consists of a duplicated caecum each with an appendix. [4].However, few cases have been reported that do not fit in Wallbridge classification such as the Horse shoe appendix may considered as Type D [5] and Triple appendix. All these anomalies are of great practical importance and a surgeon has to keep them in mind during an operation, if in case he overlook them the operated patient may experience grave consequences.

There have been some cases duplication vermiform appendix reported .First case of appendix duplex was reported by Picoli (1892) in a female patient who had associated anomalies of duplication of the entire large bowel, two uteri with two vaginae, ectopia vesicae and exomphalos.[3] Another case of Duplication of Vermiform Appendix along with Anorectal Malformation having Pouch Colon was found by Asheesh Kr Gupta et al.[6] .Duplicated appendix may be detected for the first time in patient presenting with acute abdominal pain.[7] or may even complicate to perforation [8]. In a case reported by M Mir, B Bali type-B duplex vermiform appendix was with common base, in which one was grossly inflamed, more at the tip, and the other was gangrenous.[9] Hugh J Freeman came across type A duplicated or bifid appendix with an acute appendicitis involving only one lumen associated with a focal periappendiceal abscess and localized peritonitis. The other lumen showed a well differentiated carcinoma extending into, but not through the muscularis propria. [10] A Case of a Duplicated Vermiform Appendix associated with a Meckel's Diverticulum was reported by Hemel Modi [11]. Kothari et al. reported a case of appendix duplication associated with imperforated anus. [12]

So it is inferred that appendicular duplication is the condition which is mostly diagnosed incidentally on laparotomy for any other complain or contrast study of GI system done for other clinical situations preoperatively .These patents usually present when they became symptomatic as a result of any inflammation or due to any obstruction.

This appendiceal anomaly is likely the result of some unknown embryological defect, the single appendiceal base somehow split in two and become further separated during caecal growth .This might account for just such a double based yet single structure So we should be reported such abnormalities .so it is helpful to surgeon to aware of anatomical anomalies and malposition of appendix in emergency.

CONCLUSION

Even though the abnormality is rare, the complications that might arise from an unidentified duplicate appendix may have serious life threatening consequences for the patient in our study Type B duplicated appendix was found which was pelvic and midinguinal position. Therefore surgeons in emergency services should be aware of duplication and malposition of the appendix. A missed second appendix may result in serious clinical and medico-legal consequences and it can be confused with other intra-abdominal conditions.

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