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Acute Appendicitis in a Duplicated Vermiform Appendix

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Summary:

Appendiceal anomalies are extremely rare malformations that are found in adult population as an incidental finding during laparotomy due to another reason. Accompanying intestinal or vertebral malformations may be present when appendiceal duplications are detected. Presented here is a case of Acute Appendicitis in a double Vermiform Appendix.

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Introduction:

Duplication of the vermiform appendix is rare with reported incidence of 0.004%. Less than 100 appendiceal anomalies have been reported in the literature[1-7]. Most anomalies of the appendix have been observed in adults and most were noticed incidentally during surgery not primarily involving the appendix. Duplication of the vermiform appendix causing small bowel obstruction, mimicking adenocarcinoma of the colon, hypotrophic and duplicated appendix and unusual duplication of appendix and cecum have also been reported. Appendiceal duplication have with colonic duplication and genito-urinary abnormalities, or with gastroschisis can exhibit life-threatening conditions[1,3].

Case Report:

A 14 year old girl presented with periumbilical pain and anorexia for a duration of 06 hours. Initially the pain was in the umbilical region but later on the pain shifted to the right iliac fossa. There was no vomiting and menstrual complaint. Her bowel and bladder habits were normal. On physical examination the patient was found haemodynamically stable but on local examination the right MC-Burney's point was tender with positive rebound tenderness. There was leucocytosis with relative neutrophilia. Abdominal ultrasound was normal. Clinically and with relevant investigations the condition was diagnosed as acute Appendicitis. Appendicectomy under general anaesthesia was planned. Laparotomy was performed with a Lanz incision. In the abdominal cavity 02(two) appendices were found in a single caecum (fig: 1). One appendix was found in its normal position and another one 03 cm away from the first one in one of the tinea coli. One of the appendix was found moderately inflamed at its catarrhal stage and other was gangrenous without any evidence of perforation. Appendicectomy was performed without any difficulty.

Postoperative recovery was uneventful. Histo-pathological examination of excised specimen revealed acute inflammation in one appendix and gangrenous appendicitis in other one.

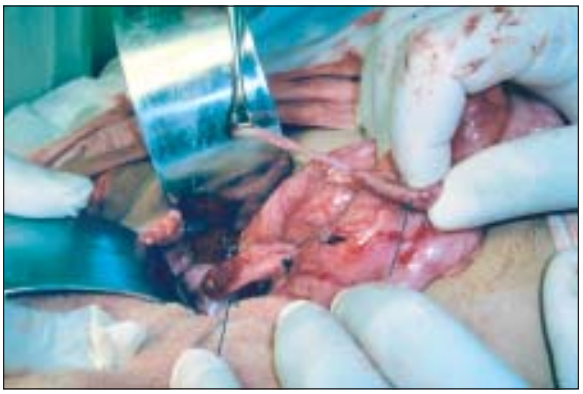

Fig.-1: *Vermiform appendix marked by arrow (One short with gangreneous tip & another long with inflamed base)*

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Discussion:

Although the range of variation in characters and position is diverse in the experiences of surgeons, the congenital anomalies of appendix are rare in clinical practice. Furthermore, duplication anomaly is so rare that less than 50 cases have been reported in English literature[4]. Appendiceal anomalies include anomalous location of single appendix, horseshoe anomaly of the appendix, agenesis, duplication and triplication[2]. There is single case report of appendicular triplication[2,7].

Double appendix is usually asymptomatic, the majority of them are diagnosed on diagnostic laparoscopy or on postmortem examination and some of them can be picked up preoperatively on barium enema or on exploration for appendicectomy or for other reason[2,8].

The classification of duplication of appendix was first made in 1962 by Cave and Wallbridge[8]. It was finally modified by Bierman in 1993. The classification divides these duplications into the following types (fig: 3).

Type A: It consists of various degrees of partial duplication on a normally localized appendix with a single caecum.

Type B: It includes a single caecum with two completely separated appendices. This type has subgroups.

B1: There are two appendices localized symmetrically on either side of the ileo- cecal valve; this resembles the normal phylogenetical arrangement in birds, so this group was called the "bird-like or avian" type.

B2 : In addition to a normally localized appendix from the caecum at the usual site and a second, separate, rudimentary appendix arising from caecum localized along the taenia line at a varying distance from the first.

B3 : The second appendix is located along the taenia of the hepatic flexure of the colon.

B4 : The location of the second appendix is along the taenia of the splenic flexure of colon..

Type C : Double caecum, each caecum bears an appendix.

Type D is a horse-shoe appendix with two openings at the common caecum[3].

Fig.-2: *Wallbridge-Waugh classification of appendiceal duplication*

This reporting patient had type B2 appendiceal duplication. These two appendices were having two separate bases. Each appendix had its own blood supply.

Duplication of the appendix must be distinguished from the solitary diverticulum of the caecum and from appendiceal diverticulosis. This distinction can be best made histopathologically[3,4,9]. When appendiceal duplications are detected in childhood, almost all patients have serious associated intestinal, genito-urinary or vertebral malformations. These anomalies are mostly associated with type B1 and C duplications[10].

Conclusion:

Appendicectomy is usually done by junior surgical residents. But they should be aware of and look for the possibility of appendiceal anomalies. In patient with appendiceal duplication both the appendix should be removed so as to avoid the confusion that may arise on removal of single appendix only.Besides, the second untreated appendix or missed appendix may have serious clinical and medicolegal implications.

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