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RESEARCH ARTICLE

EXAGGERATED CAECUM WITH ABERRANT APPENDIX- A CASE REPORT

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Abstract

Introduction: Depending on shape, four types of caecum are known out of which exaggerated caecum is of rare type. In this type the right saccule of caecum overgrows and left saccule is atrophied. In normal anatomy the appendicular orifice is situated about 2.5 cm below and behind the ileocaecal Orifice.

Methodology: The right iliac fossa was dissected to note for the position of Appendix with respect to iliocaecal junction in a formalin fixed cadaver.

Result: An exaggerated caecum with aberrant appendix was found, with the base of appendix above the ileocaecal junction, a large right sacculation and an absent left sacculation of the Caecum was also observed.

Conclusion: An exaggerated caecum in itself is uncommon but along with the positional variation in the base of appendix it becomes a rare finding. The knowledge about this variation will be useful to surgeons while operating in this region.

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Introduction:-

Caecum is the commencement point of large intestine, and it is located in the right iliac fossa. It is a blind pouch which is approximately 6 cm long and 7.5 cm in width. Vermiform Appendix usually lies in retrocaecal recess which is present posterior to the caecum [1].

Caecum is of 4 types:-

1. Conical (Fetal) 2%
2. Quadrate (Infantile) 4%
3. Ampullary (Normal) 86%
4. Exaggerated (Asymmetrical) 8%

Appendicular orifice is located below the ileocaecal junction in its normal morphology. The position of the appendix varies based on direction of the tip of appendix. Most common is retrocaecal position, followed by the pelvic position and the others namely paracolic, splenic (pre-ileal and post- ileal), promonteric and subcaecal. It is worthwhile to note that base of the appendix is most often fixed while the position of the tip varies leading to above positions [2]. During the greater part of fetal life, the appendix arises from the apex of the caecum. The lateral (right)

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wall of the caecum grows much more rapidly than the medial (left) wall while descending from subhepatic position to right iliac fossa where appendix comes to lie on the medial wall of caecum [3].

Methodology:-

A 75 yr male cadaver with no past history of any abdominal surgery was taken up for regular dissection. With adequate exposure of the right iliac fossa, post reflection of the rectus sheath, the large intestine was identified along with the caecum. The caecum was traced and the base of the appendix was identified by the confluence of all the three taenia coli. The base of the appendix was noted to be above the ileocaecal opening. Upon reflection of caecum, the appendix was observed in a retrocaecal position. The right wall of the Caecum was cut open to note for the opening of ileocaecal opening and appendicular orifice.

Results:-

Grossly, caecum was noted to have a large right sacculation with absent left sacculation. On tracing the taenia, the base of the Appendix was identified, which was located 3cm above the ileocaecal junction [Fig1]. The opening of the ileocaecal orifice and appendicular orifice were noted from the inside [Fig2]. Position of the Appendix was noted to be retrocaecal with its attached mesoappendix and appendicular artery, branch of ileocolic artery. The asymmetrical morphology of the caecum signifies the exaggerated variety of caecum.



Fig 1:- Base of the appendix opening above Ileocaecal junction (ICJ) and distance being measured as 3 cm.

AC- Ascending Colon, A – Appendix, I- Ileum, ICJ -Ileocaecal Junction, LM – Left Margin, C - Caecum

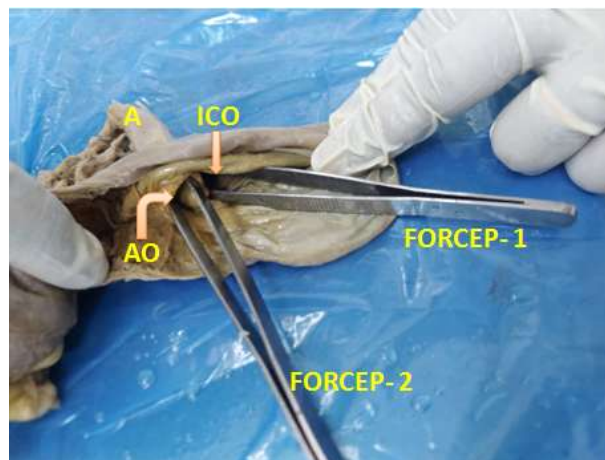


Fig 2:- Cut through view of Right Caecal wall showing forceps 1 into the ICO and Forceps 2 in AO.

A – Appendix, ICO –Ileocaecal Opening, AO-Appendicular Opening

Discussion:-

The differential growth of the caecum is responsible for the different positions of the appendix [2]. Kelly and Hurdon described various position of the appendix, in order of frequency where the position - medial to caecum over ileum [4] was noted to be the least common. The ultimate position of the appendix is influenced by the change in position and shape of the caecum during its development and growth [5]. The present case of aberrant position of Appendix with respect to caecum can only be explained because of differential growth of right wall of caecum in forward and anticlockwise direction resulting in present position of Appendix with respect to ileocaecal junction. Developmentally, around 10th week of intrauterine life the loops of the intestine return back inside the cavity of the abdomen. During this process, the caecum gradually descends into the right iliac fossa, with a counterclockwise twisting motion around its longitudinal axis. Simultaneously, the anterolateral wall of the caecum stretches and grows faster than the other parts, causing displacement of the appendix from its original position at the apex of the caecum, to an anteromedial position [6]. Caecum and appendix are derived from the 'Caecal bud' which forms in the midgut just next to the apex of the umbilical herniation at 6th week. The bud marks the meeting point between ileum and colon. During elongation of the colon and rotation of the midgut, caecum changes its position [7]. During development of the growing embryo, a strong torsion of the caecum and ascending colon as well as further growth of the right wall of the caecum can shift the base of appendix towards the ileocecal junction area, resulting in pre-ileal and, in extreme cases, post-ileal position and a possibility for the base of appendix to overshoot the ileocaecal junction and comes to lie above it [4, 8]. Authors have described the shape of caecum and categorized it into fetal, infantile or conical, adult, exaggerated groups [9]. Gender, age, body posture changes, and varying degrees of caecal contraction have not been described as determinants of the position of the appendix [10, 11]. The various positions mentioned in standard textbook is retro-caecal, retro-colic, pelvic, sub-caecal, pre-ileal and post-ileal [1]. Wakely has described the positions of vermiform appendix as retro- caecal and retro-colic (65.28%), pelvic (31%), sub-caecal (2.26%), pre-ileal (1%) and post-ileal (0.4%). Sub caecal and splenic positions of appendix are rare [12].

Conclusion:-

An exaggerated caecum itself is uncommon but with its positional variation at the base of appendix it becomes a rare finding. Clinically, the diagnosis of an exaggerated caecum can be detected with the imaging modalities like Ultrasound and MRI, which can greatly differentiate the type of the caecum and any abnormal position of appendix especially when an immediate surgical intervention is required. Ileocaecal junction is guarded by ileocaecal valve which prevent retrograde movement of colonic contents into the ileum, the same can be appreciated by radiologist in barium enema. At the same time, integrity of the caecal walls which may get distorted in case of the caecal volvulus can be noted. This case highlights high base of appendix, knowledge of which can be crucial while performing surgeries. Caecal dilatation, caecal torsion, caecal Intussusceptions are few conditions where the knowledge about the different morphological variations of the caecum helps in early evaluation and treatment.

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