

Case Report

UNDESCENDED CAECUM AND APPENDIX WITH RIGHT SIDED SIGMOID COLON - A CASE REPORT

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Abstract :

During routine dissection of abdomen for undergraduate students in Yenepoya Medical College, a male cadaver presented with variation in disposition of large intestine and inferior mesenteric artery. Caecum and appendix were present in the right lumbar region. The descending colon crossed the median plane in front of great vessels to the right side and then it continued as sigmoid colon in the right iliac fossa. Inferior mesenteric artery arose from right side of abdominal aorta to supply the left one third of ascending colon, descending colon and sigmoid colon.

Keywords: Descending colon, Sigmoid colon, Inferior mesenteric artery.

Introduction :

Congenital abnormalities of intestines are more common, like non rotation or mal rotation of the gut that result from incomplete rotation or fixation of the intestines¹. Large intestine extends from the ileocaecal valve to the anus. It forms a border around the loops of small intestine that are located centrally within the abdomen. Normally large intestine begins in the right iliac fossa as caecum from which vermiform appendix arises. The caecum becomes the ascending colon which passes upwards in the right lumbar region and hypochondriac region to the inferior aspect of liver where it bends to left forming hepatic flexure and becomes the transverse colon. This loops across abdomen with an anteroinferior convexity until it reaches left hypochondrium where it curves inferiorly to form splenic flexure and becomes descending colon, which proceeds through the left lumbar and iliac regions to

become sigmoid colon in the left iliac fossa. The sigmoid colon descends deep into the pelvis and becomes rectum and ends in the anal canal at the level of pelvic floor.

The caecum, appendix, ascending colon and right two third of transverse colon are supplied by superior mesenteric artery. The left part of transverse colon, descending colon, sigmoid colon, rectum and upper part of anal canal is supplied by inferior mesenteric artery².

Case report :

During routine dissection of a cadaver for undergraduates at Yenepoya Medical college, we noticed a variation in which caecum and appendix were present in the right lumbar region. A short ascending colon extended upwards measuring 8 cm from the caecum, ended at hepatic flexure. Transverse colon measured about 25 cm passed to left side up to splenic flexure. The descending colon instead of passing vertically downwards crossed the median plane in front of great vessels to the right. Then it ran vertically downwards and continued as sigmoid colon in the right iliac fossa. The total length of descending colon was 30 cm. The redundant loop was covered with mesentery. Inferior mesenteric artery arose from the right side of abdominal aorta, it descended retroperitoneally along the right side of aorta as superior rectal artery and it gave sigmoid branches to right side.

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Figure 1 : Abdominal cavity showing large intestine and small intestine.



Figure 2 : Abdominal cavity showing large intestine after removal of small intestine.



A - Ascending colon, C - Caecum, V - Vermiform appendix, H - Hepatic flexure of colon, T - Transvers colon, F - Splenic flexure of colon, D - Descending colon, LS - Starting of loop, L - Loop, LE - Ending of loop, S - Sigmoid colon, R - Rectum.

Discussion :

Development of midgut is divided in to 3 stages. In first stage intestinal loop rotates through an angle of 90 degree in an anticlockwise manner and in second stage it shows sequential reduction of the intestinal loop from physiological hernia at the end of tenth week, until the caecum reaches the subhepatic region. In third stage caecum and appendix grow caudally from subhepatic region, pass through right lumbar region and finally reach the definitive position in right iliac fossa. The total range of rotation around superior mesenteric artery is about 270 degree. When the rotation is complete the derivatives of midgut undergoes a process of fixation. Due to defects of fixation ,the caecum and appendix may occupy the subhepatic, right lumbar or pelvic region³. This explains the presence of caecum and appendix in the right lumbar region in the present case.

Abdominal aorta gives three ventral branches to alimentary tract, the celiac trunk, superior mesenteric and

inferior mesenteric arteries. The origins of three arterial trunks migrate caudally from their primitive positions due to growth of new caudal stems. So the origin of inferior mesenteric artery migrate from fifth thoracic to the third lumbar segment and it turns to left side³. This theory explains the right sided course of inferior mesenteric artery to supply right sided sigmoid colon in the present case.

Right sided sigmoid colon has some surgical aspects in acute diverticulitis or carcinoma of sigmoid colon, which may be diagnosed as acute appendicitis ⁶. Symptoms that may arise from this condition are pronounced constipation, indefinite discomfort over the colon, indigestion, loss of weight, insomnia, pain and tenderness in the right iliac fossa caused by spasm proximal to the point of redundancy ⁴. Elongation and displacement of sigmoid colon to right side was noted in radiological studies^{4,5} and redundant loop of descending colon and right sided sigmoid colon was reported in cadavers also⁷.

Conclusion :

In the present case, male cadaver presented with redundant loop of descending colon, right sided sigmoid colon and undescended caecum. This particular case adds to the knowledge of surgical anatomy .This variation should

be kept in mind while undertaking any investigative or surgical procedures.

Acknowledgements :

The authors are grateful to Yenepoya University for permission to carry out this study.

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