Case Report

Subhepatic caecum - Its clinical and embryological significance

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Abstract

Background: Normally the caecum lies in the right iliac fossa. Initially during development it lies in the right upper quadrant below liver and due to elongation of colon it descends into right iliac fossa. **Case report** – During routine cadaveric dissection of abdomen since last six years out of 36 cadavers in one aged male cadaver we found caecum was present below the liver known as sub-hepatic caecum the caecum was dilated and there was no ascending colon. **Conclusion**- Due to non descent or early fixation of caecum, the ascending colon was not formed and hepatic flexure was also not developed. Due to presence of caecum below the liver the pain of appendicitis may be misdiagnosed as cholycystitis as both of them has same symptoms .Any pathology of caecum may be misdiagnosed as pathology of liver.
Key Word: non descent, subhepatic, cholycystitis.

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INTRODUCTION

Normally the caecum lies in the right iliac fossa. Initially during development it lies in the right upper quadrant below the liver and due to elongation of colon it descends into right iliac fossa. Due to developmental anamoly there is a non descent of the caecum which leads to a subhepatic caecum.

MATERIAL AND METHOD

During routine cadaveric dissection of abdomen in the last 6 years on 36 cadavers we found one variation in an old aged male cadaver that caecum was present below the liver known as subhepatic caecum.

OBSERVATION

On further dissection we found that caecum was dilated. It was adherent to liver and there was indentation on the liver. Caecum was fixed, transverse colon was normal, terminal Ileal opening is seen. Due to the fixation of caecum the ascending colon was not formed and hepatic flexure was also not well developed. Appendix was retrocaecal. In the same cadaver the ileocolic artery is passing superficial to the right kidney which is not normal. The right colic artery was also absent in the same cadaver.

DISCUSSION

Congenital anomalies of intestine are not uncommon, these anomalies occur due to midgut rotation, non-rotation or malrotation. The true incidence of intestinal rotational disorder is high as 1% of the total population[1] and roughly 50% to 70% of from the dorsal abdominal wall by an elongated mesentry. The cranial limb grows rapidly and forms loops of small intestine, caudal limb undergoes little change and develop a caecal swelling.

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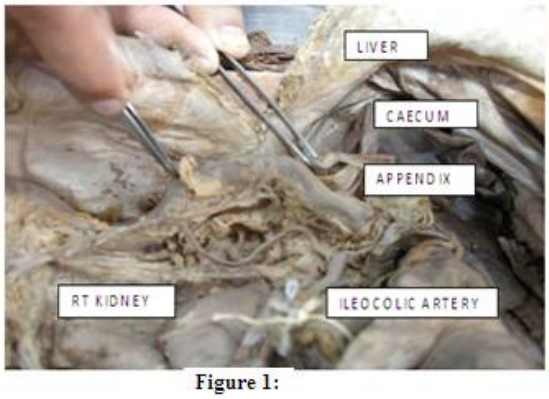

Figure 1:

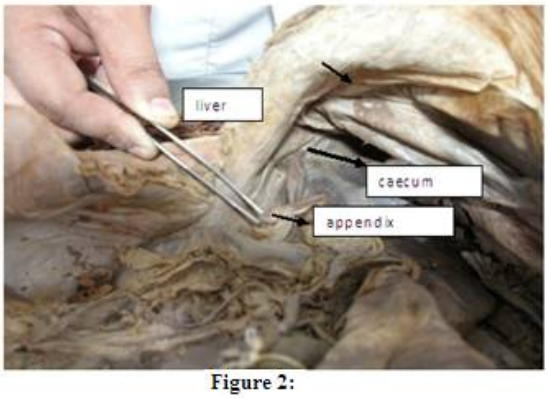

Figure 2:

Figure 3:

Now this midgut loop undergoes rotation. Midgut elongates faster than trunk: herniates into umbilical cord in 6th week Midgut loop connected to yolk sac via a yolk stalk Cranial limb of loop: jejunum and most of ileum Caudal limb: distal ileum, caecum, ascending colon, proximal part of transverse colon Series of three 90º counterclockwise rotations around the superior mesenteric artery Sequential return of the gut to the trunk During the 10 week, the intestines return to the abdomen .The small intestine return first, passing posterior to superior mesentric artery and occupies the central part of the abdomen. As the large intestine returns it undergoes 180-degree counter-clockwise rotation. Later it comes right side of the abdomen The ascending colon become easily recognizable as the posterior abdominal wall progressively elongates. When the ascending and descending portion of colon obtain their definitive cases occur during the first four weeks of life.[2] The mid gut loop has a cranial and caudal limb and suspended position, their mesentries press against the peritoneum of the posterior abdominal wall. After fusion of these layer the ascending and descending colon are permanently anchored in a retroperitoneal position. Transverse mesocolon fuses with the wall of greater omentum. Extend from hepatic flexure to splenic flexure. Mesentry of small intestine extend from duodenojejunal junction to ileocecal junction. Bennet and Rolleston reported abnormal fixaton of the caeum over the right kidney. In (2016) Hock ching chong *et al* reported a case of 42 yr aged male who complains of acute appendicitis and was diagnosed as subhepatic caecum wit subhepatic appendicitis.[11] SS Das and S. Mishra *et al* (2014) reported a case of 60 years old aged male cadaver. in which subhepatic caecum was present below the right lobe of the liver and with short ascending colon[10].Keithl L .Moore (2008) reported a case of subhepatic caecum, the liver was diminished in size, the caecum in its fetal position and there was high riding appendix.[3] Lockwood in '1892'reported one case studied at autopsy.Treves in 1885 listed 2 out of 100 cases studied at autopsy. Robinson reported two cases in study of 130 necropsies. Smith in '1911' reported autopsy studies on infants, most of whom were under 3 months of age, stated that the nondescent of caecum occur in 6% of 1050 cases. Nagashree in 2013 reported one case during routine dissection with absent ascending colon[4.] Some surgeons have also accidently discovered occasional cases of subhepatic caecum at the time of operation. Derangement may occur at any stage either rotation or fixation, the subhepatic caecum occurs in 6% of populations.[5] Smith in '1911' reported autopsy studies on infants, most of whom were under 3 months of age, stated that the nondescent of

caecum occur in 6% of 1050 cases. The tip of appendix is supplied by ileocolic artery but sometimes it supplied by right colic artery failure to recognize these vascular anamolies may lead to serious complications[6,7] These vessels may get damaged during renal surgery if the subhepatic caecum is not properly diagnosed. During normal ultrasonography the position of caecum and colon is not well demarcated so the presence of these vessels at abnormal site may be misdiagnosed. Because of presence of caecum below the liver the pain of appendicitis may be misdiagnosed as cholecystitis, subhepatic appendicitis is rarely reported variant of a common surgical emergency that lead to delayed diagnosis and causes higher complication rates like perforation[8]. Any pathology of caecum may be misdiagnosed as the pathology of liver. Recurrent abdominal pain in otherwise healthy adults may be caused by developmental anomalies of gut. These anomalies should be kept in mind before any psychiatric cause[9]

CONCLUSION

Due to non- descent or early fixation of caecum the ascending colon was not formed and hepatic flexure was also not developed, because of presence of caecum below the liver the pain of appendicitis may be misdiagnosed as cholycystitis as both of them has same symptoms. Any pathology of caecum may be misdiagnosedas pathology of liver.

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