

# A Rare Presentation of Subhepatic Caecum and Appendix with Atrophic Gall Bladder in a Cadaver

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## ABSTRACT

A case of subhepatic, mobile caecum and appendix was found in a 65-year-old male cadaver. The appendix was attached to the right wall of caecum, in addition, a small and atrophic gall bladder, only 1.5 cm in length, was noted in the fossa for gall bladder of liver, connected to the right colic flexure by a cystocolic peritoneal band. The case was found during the routine dissection for the undergraduate medical students. This kind of finding has not been reported in any previous literature associated with subhepatic caecum. This unusual position of appendix might cause atypical sign and symptoms during episode of acute appendicitis. This might affect the gall bladder, located in close vicinity, leading to inflammation, atrophy and adhesion to the adjacent right colic flexure. This type of case might cause diagnostic and management challenges for the clinicians and complicated disease conditions in the patients.

**Keywords:** Appendicitis, Cholecystitis, Dissection, Malrotation

## CASE REPORT

A 65-year-old male cadaver was dissected in the Department of Anatomy, AIIMS, Kalyani for the first year MBBS students. An unusual position of caecum and appendix and unusual appearance of gall bladder (formalin fixed) was noted in the cadaver. The cause of death was obtained from the records, however, could not clearly show any association with the reported condition.

The abdominal cavity was dissected during routine practical classes for the MBBS First year students. It was found that caecum and appendix were located in right hypochondrium immediately below the inferior surface of the liver. The caecum was not attached with posterior abdominal wall and was easily retractable. The appendix was paracaecal in position, it opened on the inferolateral aspect of the right wall of the caecum with its tip directed towards 7 O'clock position. The ileocaecal junction was located at the posterolateral aspect of caecum as well. The right colic flexure was deeply placed beneath the caecum [Table/Fig-1]. After retraction of the caecum, the ascending colon was found to be directed backward and looped beneath the caecum in continuation with the right colic flexure. There were no signs of any surgical or traumatic scarring, or pathological lesions in the anterior abdominal wall.

A small, atrophic, thick-walled gall bladder was noted, adhered to the fossa for gall bladder of liver. It was cystic on palpation, approximately 1.5 cm in length, and no bile staining was noted in and around the gall bladder. A peritoneal band extending from the fundus of gall bladder towards the right colic flexure was noted with minute, collapsed blood vessels [Table/Fig-2]. The cystic duct and the common bile duct were within normal anatomical limit.

## DISCUSSION

Here, we report a case of subhepatic mobile caecum, and appendix in close proximity to inferior surface of liver, and a small atrophic gall bladder connected by peritoneal band to the right colic flexure.

Caecum and appendix, embryologically derived from midgut loop, are usually located in right iliac fossa and its lower end reaches the pelvic brim [1]. The incidence of subhepatic caecum and appendix has been reported in approximately 6% of fetuses, however, cases of subhepatic appendicitis are rare and has been reported in only



**[Table/Fig-1]:** Subhepatic caecum and appendix.

Arrow-showing appendix, 1-terminal ileum, 2-caecum, 3-pylorus of stomach, 4-liver, 5-greater omentum, (S-superior, I-inferior, R-right, L-left)

0.09% cases [2-7]. Acute appendicitis in subhepatic position might pose diagnostic and management challenges to the clinicians [2,3, 5,6,8-10]. A gall bladder is usually 7-10 cm in length, lies over fossa for gall bladder of liver [1]. Agnesis or atresia of gall bladder has been rarely diagnosed and reported [11].

According to embryological explanation, the caecum develops from of the postarterial segment of the midgut loop. After physiological herniation and returning of midgut loop to the abdomen, the caecum is positioned just inferior to the liver. Failure of descent of caecum



**[Table/Fig-2]:** Atrophic gall bladder with cystocolic peritoneal band (seen after retracting the mobile, subhepatic caecum).

Yellow arrow-showing gall bladder, red arrow-showing cystocolic peritoneal band, 1-liver, 2-stomach, 3-caecum, 4-ascending colon, 5-greater omentum, 6-transverse colon, (S-superior, I-inferior, R-right, L-left)

due to certain causes including incomplete rotation, malrotation and adherence to the inferior surface of liver by a fibrous band of Ladd's, might cause its subhepatic positioning. Due to improper differentiation of walls of the caecum, the appendix could arise from lateral wall of caecum [5,12].

In most cases, subhepatic caecum is asymptomatic and therefore, it remains undiagnosed. The previous clinical case reports of subhepatic appendicitis [3,5,6,8-10] revealed that the diagnosis of acute appendicitis in an unusual position was difficult and delayed. The patients presented with right hypochondriac and epigastric pain with or without vomiting and the commonest diagnosis was acute cholecystitis. Cases were seen where the differential diagnosis included liver abscess, renal colic, peptic perforation etc, and finally the case was diagnosed by Computerised Tomography (CT) or during diagnostic laparoscopy [3,5,6,8-10]. As acute appendicitis is an emergency, the delayed diagnosis often led to appendicular abscess, suppuration, perforation, sepsis and required surgical procedures ranging from open appendectomy to exploratory laparotomy [3,5,6,8,10].

Diffuse thickening of gall bladder wall with functional loss has been reported in inflammatory process of gall bladder which could be the possible cause of present case of atrophic gall bladder without any bile staining [11]. The peritoneal band could have resulted as a response of inflammation of gall bladder followed by adhesion to nearby greater omentum or could be congenital in development. It was suggested that radiologic imaging including abdominal CT is essential in diagnosing various gall bladder pathologies [13]. Any report associated with atrophic gall bladder and abnormal peritoneal band was rarely found. Such band might result in further complications including volvulus of gut loops [14]. The published

literature showed more frequent presence of accessory peritoneal ligaments in supra-colic compartment of the peritoneal cavity [15]. In present case, the cystocolic peritoneal band was seen in the supracolic compartment only extending from gall bladder to right colic flexure. Most probably it was derived as a result of recurrent inflammation of gall bladder or was congenital in origin.

## CONCLUSION(S)

Presence of subhepatic, mobile caecum and appendix along with atrophic gall bladder, connected to right colic flexure by cystocolic peritoneal band is a rare occurrence. This type of subhepatic appendicitis is difficult to diagnose because of atypical presentation. It might mimic hepatobiliary pathology or might result in inflammation of the gall bladder in close vicinity resulting in adhesion with adjacent structures leading to further complications. These possibilities should be kept in mind by the physicians and surgeons dealing with patients with right upper quadrant abdominal pain. The awareness about the possibility of unusual subhepatic location of appendix, high index of suspicion, advanced radiological investigations and early exploratory laparotomy might detect these cases earlier.

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