

Case report**VARIANT POSITION OF THE GALLBLADDER ASSOCIATED WITH ABNORMAL PERITONEAL FOLD AROUND IT****Narendra Pamidi, Srinivasa Rao Sirasanagandla, Satheesha Nayak B, Raghu Jetti***Department of Anatomy, Melaka Manipal Medical College (Manipal Campus), Manipal University, Manipal. Karnataka state, India.***RESUMEN**

Los pliegues peritoneales anómalos alrededor de la vesícula biliar son muy raros y pocos fueron reportados en el pasado. La presencia de tales pliegues peritoneales son probablemente debidos a la extensión del mesenterio ventral que forma el omento menor. En el caso presente, reportamos un pliegue peritoneal anómalo suspendiendo la vesícula biliar desde la superficie inferior del hígado, a lo largo de la margen izquierda de la fosa para la vesícula biliar. Este pliegue, cuando se trazó cuidadosamente, se continuaba con el colon transverso, mesocolon transverso y también se encontró fusionado con la segunda porción del duodeno. La vesícula biliar con inusuales pliegues peritoneales tiene tendencia a vólculo, una rara enfermedad que exige la intervención quirúrgica inmediata. El conocimiento de la posibilidad de tal anomalía peritoneal alrededor de la vesícula biliar facilita la interpretación de los hallazgos de la imagen para el diagnóstico apropiado.

Palabras claves: *Vesícula biliar, pliegue peritoneal, vólculo, mesenterio ventral, colon transverso, mesocolon transverso.*

ABSTRACT

Anomalous peritoneal folds around the gallbladder are very rare and a few were reported in the past. The presence of such peritoneal folds is probably due to extension of the ventral mesentery which forms the lesser omentum. In the present case we report anomalous peritoneal fold suspending the gall bladder from the undersurface of the liver, along the left margin of the fossa for gallbladder. This fold, when traced carefully, became continuous with transverse colon, transverse mesocolon and also found to be merged with the second part of duodenum. The gallbladder

with unusual peritoneal folds has a tendency to volvulus, a rare surgical disease which demands the immediate surgical intervention. Awareness of the possibility of such peritoneal anomaly around gallbladder facilitates the interpretation of image findings for proper diagnosis.

Keywords: *Gallbladder, peritoneal fold, volvulus, ventral mesentery, transverse colon, transverse mesocolon.*

INTRODUCTION

Peritoneum is the largest and most complexly arranged serous membrane. It lines the abdominal parities and is reflected over the viscera to invest them partially or completely. The peritoneal reflections form several folds which are called the ligaments, mesenteries and omenta. These folds suspend and provide support to the abdominal organs and carry blood vessels to them. The peritoneal reflections divide the peritoneal cavity into recesses and spaces and form the boundaries to them.

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Specific attachments of these folds to the abdominal wall and viscera determine the route of spread of intraperitoneal fluid and consequently, disease processes within the abdominal cavity. The peritoneal cavity and its reflections are the frequent sites for the infective, inflammatory, neoplastic and traumatic processes. In utero, the alimentary tract develops as a single tube suspended in the coelomic cavity by ventral and dorsal mesenteries. Ultimately, these

mesenteries undergo complex process of development where various primitive mesenteries disappear. If for any reason, the primitive mesenteries persist they result in the formation of abnormal peritoneal folds. Presence of such folds around the gallbladder is very rare but a few cases have been reported in the past (Omer et al, 2006; Wendel, 1898). The gallbladder with unusual peritoneal fold has a tendency to volvulus (Shaikh et al, 2005).

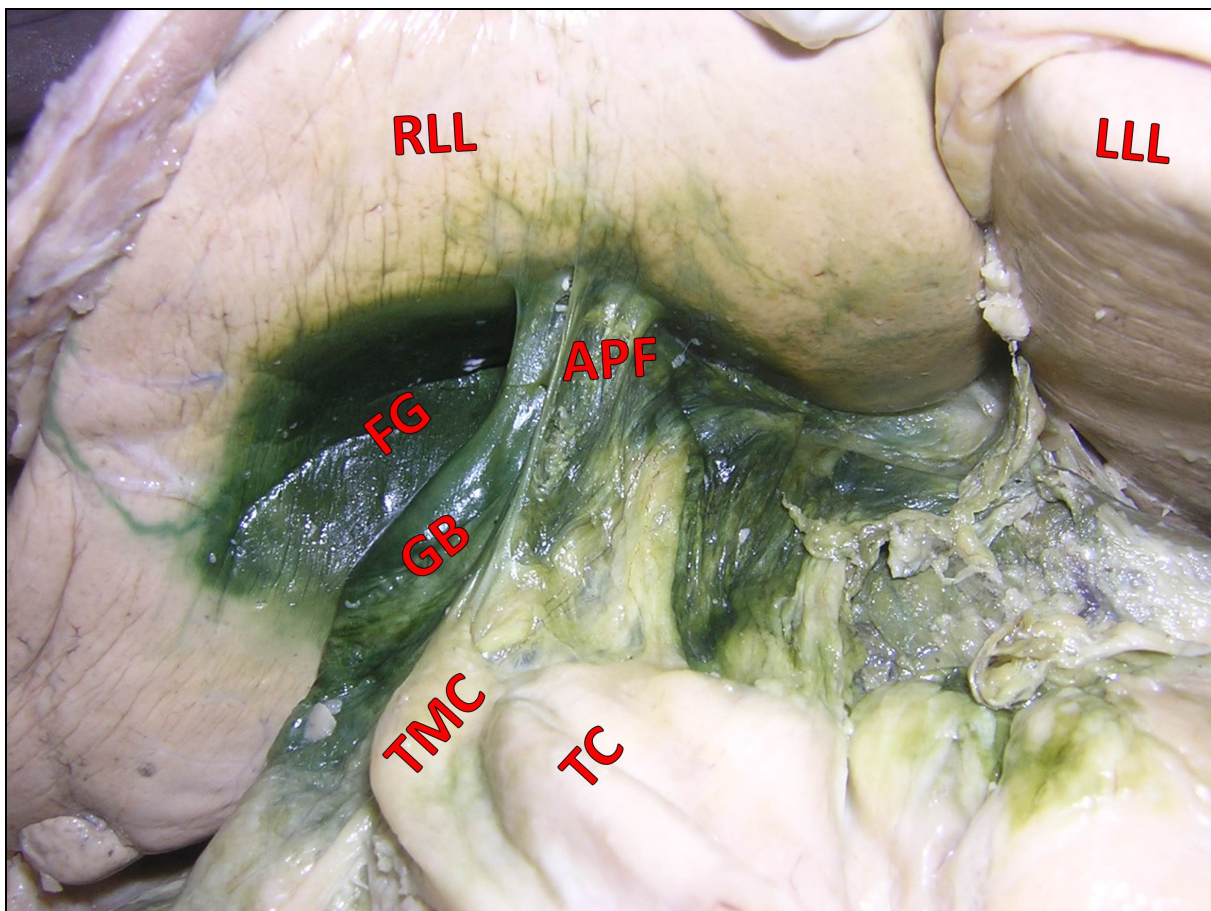


Figure 1: Closer view of the dissection of the abdominal cavity, showing the abnormal peritoneal fold (APF) suspending the gallbladder (GB) from the left margin of fossa for gallbladder (FG) in the inferior surface of the right lobe of liver (RLL). (Left lobe of liver (LLL), Transverse colon (TC) and Transverse mesocolon (TMC)).

CASE REPORT

The present case with the anatomical anomaly of peritoneum around the gallbladder was observed in an approximately 50-year-old formalin embalmed male cadaver, during dissection classes to the undergraduate medical students at Melaka Manipal Medical College, Manipal, India. In the present case, the gallbladder was found to

be suspended from the undersurface of the right lobe of liver by a fold of peritoneum. The line of attachment of this fold was observed along the upper 2/3rd of the left margin of fossa for the gallbladder (Fig. 1). The rest of fossa was noted to be completely covered by a peritoneum. The peritoneal fold, when traced carefully, became continuous with the transverse colon and transverse mesocolon in the sub-hepatic region.

This fold also extended to the second part of duodenum from the transverse colon (Fig. 1). After dissection of this fold, the gallbladder was found to be normal in size and there were no anomalies of cystic artery, cystic duct and common bile duct.

DISCUSSION

The rotation of the gallbladder on its mesentery along the axis of the cystic duct and cystic artery leads to gallbladder volvulus (Tarhan et al, 2006). Wendel was the first person, who described this extremely rare surgical disease (Wendel, 1898). The presence of mobile peritoneal fold is the prerequisite for the gallbladder volvulus. Earlier two cases of volvulus of the gallbladder have been reported by Shaikh et al (2005). Gallbladder possessing supporting membranes has been observed in 4 to 5% of specimens (Sheila, 1993). A cadaveric study conducted by Sridevi et al (2011) revealed the presence of abnormal mobile fold in 1% of cases. The abnormal position of the gallbladder associated with the mobile peritoneal fold has been described. In a study of 27 patients, there were thirteen lumbar, nine pelvic and five iliac gallbladders (Tzardinoglou et al, 1996). The abnormal peritoneal folds connecting the gall bladder with the surrounding structures have been observed. Sridevi et al (2011) have reported the unusual peritoneal fold connecting the gallbladder, on the left to gastro pyloric junction and on the right to the hepatic flexure of the colon. The abnormal cystogastrocolic fold associated with atrophy of the gallbladder has been reported (Pamidi et al, 2008). A case of abnormal peritoneal fold connecting the greater omentum with the liver, gall bladder, right kidney and lesser omentum has been observed (Satheesha, 2009). The occurrence of these peritoneal folds attributed to the abnormal pre disposition of the ventral mesentery in the embryonic life. During embryonic life, the primitive gastrointestinal tract is anchored to the anterior and posterior abdominal walls by ventral and dorsal mesenteries respectively. As the development proceeds most of the ventral mesentery disappears except in the region of terminal part of the oesophagus, the stomach and the upper part of the duodenum and is derived from the septum transversum. Later with the growth of the liver into the mesenchyme of the septum transversum, the ventral mesentery divides into; the lesser omentum, that extends from the lower portion of the oesophagus, stomach and upper portion of the duodenum to

the liver; the falciform ligament extending from the liver to the ventral body wall (Moore and Persaud, 2003). The abnormal peritoneal fold of gallbladder observed in the present case may be due to the extension of the ventral mesentery which forms the lesser omentum as explained by Sheila (1993). In the current case, this peritoneal fold extended from gall bladder to transverse colon, transverse mesocolon, and second part of duodenum. The probable reason for the existence of this fold is an embryonic adhesion between the ventral and dorsal mesenteries during rotation of the stomach (Nayak, 2009). Volvulus usually occurs in the small intestine, caecum, and sigmoid colon and rarely in the stomach. Gallbladder volvulus is a very rare disease and it requires immediate surgical intervention (Sheik et al, 2005). Gallbladder with two different types of unusual peritoneal folds has a tendency to volvulus; those with a wide mesentery and those in which the mesentery covers only the cystic duct and artery. The peritoneal fold of gallbladder observed in the present case is unlikely to go for volvulus, but the loss of fat and atrophy of liver which occur with advancing age may lengthen this peritoneal fold and then it may lead to volvulus (McHenry and Byrne, 1986). The abnormal peritoneal fold around gallbladder can result in misinterpretation of imaging findings. In summary, the awareness of the possibility of such anomaly facilitates the proper diagnosis. The knowledge of abnormal peritoneal folds around the gallbladder and its attachments with surrounding structures is essentially important for the surgeons dealing with the surgeries of liver, gallbladder, duodenum and colon. It is also important for the surgeons as they should not mistake these folds for the adhesions induced by recurrent attacks of cholecystitis.

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