

## A Rare Congenital Anomaly of the Gallbladder – Fundic Diverticulum

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**Abstract** Diverticulum of the human gall bladder is an important but distinct anatomical entity. Gallbladder diverticulum is an unusual and uncommon congenital anomalies that is rarely reported in the literature. We describe a patient with cholecystitis associated with a true gallbladder diverticulum was detected after surgery and confirmed histopathologically.

**Keywords:** Gallbladder, cholecystitis, cholelithiasis, diverticulum, congenital anomalies.

### INTRODUCTION

Diverticulum of the human gall bladder is an important but distinct anatomical entity with significant clinical implications. Gallbladder diverticulum is one of the rarest congenital anomalies of the gall bladder being rarely discussed in literature [1]. Maximum of the cases diagnosed after surgical resection, except 1 case, reported by Basaranoglu and Balci [2], that showed a true gallbladder diverticulum by magnetic resonance cholangiopancreatography (MRCP). We describe a patient with cholecystitis associated with a true gallbladder diverticulum was detected after surgery and confirmed histopathologically.

### CASE REPORT

A 62-year-old woman was admitted to our surgery department with pain in the right upper quadrant of the abdomen and nausea for two years and on the physical examination, she had a positive Murphy sign. On the ultrasonography examination there were multiple gallstones. Laboratory investigations were within normal limits. On the basis of clinical, radiological, and laboratory evaluations, the diagnosis was chronic cholecystitis and cholelithiasis. Open cholecystectomy was performed. After cholecystectomy gall bladder showed a pouch at the fundus, covered by peritoneum (Fig. 1). On opening the gall bladder mesentery the full dimensions of diverticulum were visible (Fig. 2). The diverticulum was 3 cm x 2.5 cm, with a wide neck. The final histopathologic diagnosis was a true diverticulum of the gallbladder. The patient was well without any clinical symptoms after a follow-up period of one year.



Fig. 1: Arrow showing diverticulum at fundus of the gallbladder



Fig. 2 Arrow showing diverticulum after opening the mesentery of gallbladder

## DISCUSSION

A diverticulum is the medical or biological term for an outpouching of a hollow (or a fluid-filled) structure in the body [3]. A gallbladder diverticulum is a rare and an uncommon entity rarely discussed in the literature that is one of the rarest congenital anomalies of the gall bladder [1]. These can be either of congenital or acquired variety. Congenital gall bladder diverticulum should be differentiated from acquired or pseudo or false variety which is a result of underlying pathology [4]. A true diverticulum is a rare congenital anomaly of the gallbladder and includes all three layers of the gallbladder wall [5]. Diverticula of the body and neck may arise from persistent cystohepatic ducts, which run during embryonic life between the gallbladder and liver [6]. The fundal variety arises from incomplete vacuolization of the solid gallbladder during embryonic life. An incomplete septum pinches off a small cavity at the tip of the gallbladder. The congenital variety should be distinguished from pseudodiverticula developing in the diseased gallbladder as a result of partial perforation. Pseudodiverticula in these cases usually contain large gallstones [6, 7].

The cases of true diverticula of the gallbladder in maximum cases were reported to be diagnosed after surgical resection, except the case of Basaranoglu and Balci [2]. It is believed that the preoperative diagnosis of a true gallbladder diverticulum could increase because of the widespread use of sonography and MRCP as diagnostic tools, and this may be an advantage for surgeons. Sonography is used as a primary diagnostic technique in the evaluation of suspected gallbladder diseases [8, 9]. However, sonography may fail to show some anomalies such as a Phrygian cap because it is an operator-dependent examination compared with the objective MRCP examination [10]. In our case, sonography was not successful in depicting the diverticulum.

In conclusion, most of the cases of diverticulum gallbladder are diagnosed after surgery but as sonography and MRCP are being increasingly used. The imaging appearance of a true diverticulum of the

gallbladder is typical, and diagnosis is easy before surgery.

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