CASE REPORT

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Preoperative diagnosis of double gallbladder: A case report

Hakan BULUŞ, Ahmet KOYUNCU, Ali COŞKUN

Department of General Surgery, Keçiören Training and Research Hospital, Ankara

Gallbladder duplication is a rare congenital anomaly of the biliary system. There are no specific symptoms for diagnosis. We present the case of a double gallbladder, which was diagnosed preoperatively. A laparoscopic cholecystectomy was performed successfully. We discuss that the preoperative diagnosis of this anomaly is especially important to prevent possible surgical complications and repeated laparotomies.

Key words: Double gallbladder, gallbladder stones, cholecystectomy

Preoperatif tanı konulan çift safra kesesi: Olgu sunumu

Çift safra kesesi bilier sistemin nadir görülen bir konjenital anomalisidir. Tanı konulabilmesi için spesifik bir semptomu yoktur. Preoperatif tanı konulan çift safra kesesi bulunan bir olgu sunuldu. Laparoskopik kolesistektomi başarılı bir şekilde uygulandı. Bu olgu sunumunda bu anomalide preoperatif tanı konmasının ameliyatla ilgili komplikasyonlar ve tekrarlayan laparotomileri engelleyeceğini tartışma amaçlandı.

Anahtar kelimeler: Çift safra kesesi, safra taşı, kolesistektomi

INTRODUCTION

Duplicate gallbladder is a rare congenital anomaly of the biliary system, occurring at an incidence of 1 in 3000-4000 (1). Most cases are asymptomatic and may be missed (2). Duplicate gallbladder and its variable anatomy were first described by Boyden in 1926 (1). Harlaftis et al. (3) classified duplicate gallbladder anatomy into type 1 and type 2 in 1977. Recently published data have described a modified Harlaftis classification that added a left trabecular variant to the type 2 classification (4).

The preoperative diagnosis of this anomaly is especially important to prevent possible surgical complications and repeated laparotomies. In recent years, gallbladder duplication has been detected easily by computed tomography (CT) (5). We present herein a case of a duplicate gallbladder that was diagnosed preoperatively and confirmed at operation.

CASE REPORT

A 56-year-old male was admitted with a four-day history of intermittent epigastric and right upper quadrant pain, which started after a fatty meal. The physical examination revealed tenderness in the epigastric area and right upper quadrant. On admission, laboratory data showed normal white blood cell count (WBC), bilirubin, gamma-glutamyl transferase (GGT), and alanine aminotransferase (ALT). Plain X-ray film of the abdomen was normal. Upper abdominal ultrasonography revea-

Address for correspondence: Ahmet KOYUNCU
Keçiören Training and Research Hospital,
Department of General Surgery, Ankara, Turkey
E-mail: drahmet03@hotmail.com

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led multiple millimetric stones and sludge in the inflamed gallbladder. No common bile duct (CBD) dilatation or hepatic lesions were demonstrated. Furthermore, a cystic mass was observed behind the gallbladder. The CT scan showed gallbladder duplication (Figure 1). Gallbladder duplication was suspected and magnetic resonance cholangiopancreatography (MRCP) imaging was performed, which confirmed the posterior presence of the cystic mass approximately the same size as the gallbladder (Figure 2). Although gallbladder duplication was suspected, a cystic duct could not be shown.

The standard operative procedure for symptomatic cholecystolithiasis is now laparoscopic cholecystectomy. A laparoscopic cholecystectomy was performed; pneumoperitoneum was established by using the Hasson open technique and four trocars. The double gallbladder included a single cystic duct. There were no complications postoperatively, and the patient was discharged after three days. Pathologic examination showed acalculous chronic cholesterolosis in the primary and chronic calculous cholecystitis in the accessory gallbladder.

DISCUSSION

The presence of a double gallbladder is not associated with any specific symptoms, and there is no known predisposition for cholelithiasis or cholecystitis in patients with multiple gallbladders (2). Gallbladder duplication is a rare congenital anomaly, with an estimated autopsy and radiographic frequency of 0.02% and 0.03%, respectively (1).

Ultrasonography is the gold standard for the evaluation and diagnosis of gallbladder and CBD stones. Ultrasonography is a safe, cheap diagnostic technique that avoids exposure to ionizing radiation and provides detailed images with a high diagnostic accuracy in most diseases of the biliary system (5). Modern diagnostic modalities including CT, MRCP and endoscopic retrograde cholangiopancreatography (ERCP) have a higher sensitivity and specificity (6).

Boyden et al. (1) classified congenital abnormalities of the gallbladder in vesica fellea divisa and vesica fellea duplex or true duplicated gallbladder, with two cystic ducts uniting before entering the CBD (Y-shaped type) or entering separately into the CBD (H-shaped type). Gross (2) classified the duplicate gallbladder as either double (including Y-shaped, ductular and trabecular subtypes) or bilobed. Harlaftis (3) classification is the most universally accepted. This classification defines two main groups based on morphology and embryogenesis and a third miscellaneous group. The type 1 or split primordial group is subdivided into septated, V-shaped or Y-shaped. Therefore, when the cystic primordium splits during embryogenesis, both gallbladders share a common cystic duct. Type 1 septate duplicate gallbladder occurs when there is a single cystic duct and a septum that divides the two gallbladders. The accessory gallbladder types (Type 2), which can be ductular or trabecular, arise from two separate primordia on the biliary tree and possess separate cystic ducts (3).

The most common complication of double gallbladder is gallstone formation (7). However, the risk of gallbladder stone formation in the double gallbladder is the same as with a single gallbladder.

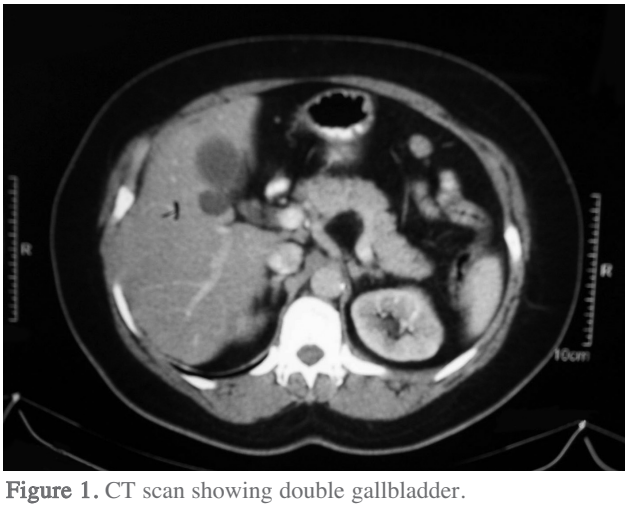

Figure 1. CT scan showing double gallbladder.

Figure 2. MRCP showing double gallbladder.

Gallstone formation is generally precipitated by obesity, hyperlipidemia, cirrhosis, increased age, family history, female gender, diabetes, and reduced gallbladder motility (8).

Surgery is not indicated for duplicate gallbladders that are discovered incidentally if neither gallbladder has disease, because there is no evidence of increased risk (9). However, surgery is the choice for symptomatic gallbladder duplication. The open or laparoscopic double cholecystectomy can be performed, as reported in the literature (6). Several authors have reported cases of duplicate gallbladder successfully treated by laparoscopic surgery (10). The most important complication of surgery is an accessory gallbladder detected during the initial operation (7).

REFERENCES

1. Boyden EA. The accessory gallbladder – an embryological and comparative study of aberrant biliary vesicles occurring in man and the domestic mammals. Am J Anat 1926; 38: 177-231.
2. Gross RE. Congenital anomalies of the gallbladder. A review of 148 cases with a report of double gall-bladder. Arch Surg 1936; 32: 131-59.
3. Harlaftis N, Gray SW, Skandalakis JE. Multiple gallbladders. Surg Gynecol Obstet 1977; 145: 928-34.
4. Kim RD, Zendejas I, Velopulos C, et al. Duplicate gallbladder arising from the left hepatic duct: report of a case. Surg Today 2009; 39: 536-9.
5. Urbain D, Jeanmort J, Janne P. Double gallbladder with transient cholestasis: preoperative demonstration by endoscopic retrograde cholangiopancreatography. Gastrointest Endosc 1980; 35: 346-8.
6. Goel A, Srivastava KN, Rana AK. Double gall-bladder – a laparoscopic management. Surg Laparosc Endosc Percutan Tech 2003; 13: 348-9.
7. Silvis R, Van Wieringen AJ, Van Der Werken CH. Re-operation for symptomatic double gallbladder. Surg Endosc 1996; 10: 336-7.
8. Schirmer BD, Winters KL, Edlich RF. Cholelithiasis and cholecystitis. J Long Term Eff Med Implants 2005; 15: 329-38.
9. Hurst JM, Mayo RA. Unsuspected latent pairing of the cystic primordium. South Med J 1980; 73: 950-1.
10. Miyajima N, Yamakava T, Varma A, et al. Experience with laparoscopic double gallbladder removal. Surg Endosc 1995; 9: 63-6.