Case Report

An Extremely Rare Bile Leakage: Aberrant Bile Duct in Left Triangular Ligament (Appendix Fibrosa Hepatis)

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1. Introduction

The structural anatomy of the bile ducts is highly variable and can be said to have almost no stable anatomy. This variability is more common in women [1]. This situation can often leave the surgeon in difficult situations during surgery on the liver, bile ducts, pancreas, and upper gastrointestinal tract [2].

Therefore, the structure of the bifurcation, especially the anatomy of the biliary tract, should be assessed very well before the operation, and possible ultrasonography, computed tomography, magnetic resonance cholangiopancreatography (MRCP), and endoscopic imaging methods should be used carefully [3, 4]. Nevertheless, after all, there may be bile leakage. Although the gallbladder surgery is performed commonly, bile leakage is seen after upper gastrointestinal system surgery for various reasons [5]. Endoscopic procedures and laparoscopic or open surgical interventions may be necessary, as well as conservative approaches such as waiting for spontaneous abortion of the leakage according to the patient’s situation [3, 5, 6].

This patient was presented due to the fact that bile leakage was very extreme and there was only one case in the literature.

2. Case Presentation

A 67-year-old female underwent bilateral truncal vagotomy, cholecystectomy, Billroth-2 gastrectomy, and Roux-en-Y procedure for pyloric stenosis twenty years ago due to early dumping syndrome and sliding-type hiatal hernia. The liver left lobe was mobilized by dissecting the left triangular ligament (appendix fibrosa hepatis) to release the cardioesophageal junction. MRCP found bile esophageal in the left triangular ligament of the liver. Aberrant bile ducts were found in the left triangular ligament and ligated. The patient was discharged on the 7th day after operation. Conclusion. The anatomical variability of bile ducts can leave surgeons in very difficult conditions. We recommend that the dissected left triangular ligament should be ligated for the aberrant bile duct, especially in female patient.
hepatis) was dissected at the observation by following the

drain (Figure 3). The injured bile duct was ligated with the

3/0 prolene suture. On 7 day after the operation, all com-

plaints resolved, and the patient was discharged without any

problems in the postoperative period.

3. Discussion

The bile ducts do not have a constant structure, so the

surgeons can have undesired surprise during the gastroin-

testinal system surgery. To avoid these situations, it is

necessary to use imaging methods for diagnosis of the biliary

tract before surgery, especially in women [2, 3, 5, 6]. It is

somewhat more difficult to predict this situation in cases of

previous gastric surgery, such as the one described by Iso

et al. [6]. This is even more difficult, especially since it is not

possible to endoscopically view the anatomy of the bile ducts
during Billroth-2 gastrectomy. We have not been able to

perform endoscopic imaging because of the presence of

Billroth-2 gastrectomy and Roux-en-Y gastrojejunostomy.

Today, however, this difficulty can be overcome by MRCP

examination [1, 3, 6]. We also used MRCP in this case where

deroscopic imaging could not be done, and we diagnosed

bile leak with this method.

Conservative approaches for the management of bile

leakages and the need for surgical intervention may vary

according to the anatomical localization and the amount of

the leakage and the clinical condition of the patient [3]. In

cases where the bile ducts can be reached by endoscopic

method, papillotomy and/or stenting can be used to reduce

the intraluminal pressure of the bile ducts and reduce the

leakage and stop them completely. However, the bile leak

into peritoneum can cause peritonitis even when the drain is

placed in the line or not [6]. In these cases, surgical in-

tervention is inevitable. In our case, there was no bile

peritonitis because the bile came directly to the drain, and
daily diversion of the bile leak was approximately

150–200 mL. In this case, if we had the possibility of performing

endoscopic sphincterotomy, we could follow this patient

without performing open surgery. However, as mentioned

above, the patient did not have a chance to do this operation

because he had Billroth-2 gastrectomy and Roux-en-Y

gastrojejunostomy. In addition, because of the abdominal

surgery performed many times before, intensive intra-

abdominal adhesions did not allow us to perform laparo-

scopic procedures and we had to do open surgery. During

surgery, aberrant bile ducts and bile leak were observed at

the localization of the left triangular ligament (appendix

fibrosa hepatis) that was previously detected by MRCP. The

leakage was sutured with prolene no. 3/0. Uysal and his

colleagues reported that the variations of biliary tracts were

seen more frequently in women than in men [1]. It was

compatible in this situation that our case was also female.

Extrahepatic and intrahepatic variations of the bile ducts are

found more frequently on the right side, but the left-settling

variations are less and the aberrant biliary tract in the left

triangular ligament is an extremely rare case.

We consider that it is important to place a drain to the

operation site for early controlling and treatment of bile

leakage, red arrow shows the left triangular ligament, and white

arrow shows the cardioesophageal junction.

Figure 1: MRCP imaging. Bile leakage is shown in the left tri-

angular ligament (appendix fibrosa hepatis).

Figure 2: MRCP imaging. Bile leakage is shown in the drain.

Figure 3: Left liver triangular ligament. Blue arrow shows bile

leakage, red arrow shows the left triangular ligament, and white

arrow shows the cardioesophageal junction.
leakage because of liver, biliary tract, pancreas, and upper gastrointestinal tract surgery, which are likely to encounter undesired surprises such as bile leakage due to the anatomical variations of the bile duct. With this idea, we recommend ligating this region if the left triangular ligament (appendix fibrosa hepatis) is dissected in surgery. In particular, it is necessary to keep in mind the possibility of aberrant bile ducts in the left triangular ligament in female patients with more biliary tract variations.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

References
