Answer

Subvesical Bile Duct (Luschka) Leak

Subvesical bile ducts of Luschka were first described by the German anatomist Herbert von Luschka in 1863. In the strictest definition, these ducts usually range in size from 1 to 2 mm in diameter and course through the gallbladder fossa to empty into the right hepatic or common hepatic duct. While ducts of Luschka are present in 3% to 5% of cadavers at autopsy, their true incidence is unknown. Recent articles describe symptomatic biliary leaks in approximately 0.1% to 0.5% of patients after open cholecystectomy. Of these symptomatic leaks, approximately 15% to 20% are attributed to ducts of Luschka. Identifying intraoperative damage to a duct of Luschka is difficult. Keeping close to the gallbladder wall during dissection is the best way to prevent injury. A careful visual inspection of the gallbladder fossa at the end of the operation may confirm the presence of a biliary leak. Placing a dry gauze pack in the gallbladder fossa and inspecting it for bile staining is a useful maneuver in open procedures. If an injury is identified during the operation, ligation of the divided biliary duct is indicated. Owing to the small size of these ducts, most symptomatic leaks do not manifest until several days postoperatively. Many go unrecognized and resolve without intervention.

Patients with symptomatic biliary leaks present with right upper quadrant pain, fever, and abdominal distention and may develop percutaneous leakage of bilious fluid. When suspected, the most sensitive and cost-effective test for diagnosing bile leaks is by hepatobiliary iminodiacetic acid scan.

Most leaks from a duct of Luschka are considered low-grade biliary leaks, making them amenable to sphincterotomy alone. This maneuver decompresses the biliary tree by diminishing the choledochal-duodenal pressure gradient of the sphincter of Oddi, allowing the biliary leak to seal. Placement of a biliary stent is rarely required. Another concern relates to the intra-abdominal bile collection. A well-localized biloma is best treated by percutaneous drainage. Extensive biliary ascites may need relaparoscopy or laparotomy for thorough peritoneal lavage. Minimally symptomatic patients usually respond favorably to endoscopic therapy alone.

In our patient, the endoscopic retrograde cholangiopancreatogram revealed a disrupted duct of Luschka that drained into the right posterior hepatic duct. Based on this patient’s presentation, an endoscopic biliary sphincterotomy was initially performed. Her bilious wound drainage promptly ceased. Owing to her minimal symptoms and scant intraperitoneal fluid, percutaneous catheter placement and surgical abdominal lavage were not required. The symptoms resolved within a few days of the procedure.

Accepted for Publication: January 26, 2007.
Correspondence: Kimball I. Maull, MD, HMC-UPMC Partnership Project, Hamad General Hospital, Al Rayyan Road, Box 3050, Doha, Qatar (maullki@upmc.edu).

Author Contributions: Study concept and design: Bledsoe and Maull. Acquisition of data: Bledsoe and Maull. Analysis and interpretation of data: Bledsoe and Maull. Drafting of the manuscript: Bledsoe. Critical revision of the manuscript for important intellectual content: Maull. Administrative, technical, and material support: Bledsoe. Study supervision: Maull.

Financial Disclosure: None reported.

REFERENCES