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The Crucial Role of Biliary Endoscopists in the Management of Bile Leak after Cholecystectomy

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See “Endoscopic Management of Bile Leakage after Cholecystectomy: A Single-Center Experience for 12 Years” by Kook Hyun Kim, Tae Nyeun Kim, on page 248-253

In this issue of *Clinical Endoscopy*, Kim and Kim¹ published an original article on the efficacy of the endoscopic management of bile leak after cholecystectomy. Endoscopic management, which involved biliary stent placement with or without biliary sphincterotomy, was successful in 30 of 32 cases (93.8%). Complications of endoscopic management occurred in four of 32 cases (1.3%), but were managed conservatively without sequelae.¹ Results from this study reconfirm the crucial role of biliary endoscopists in the management of bile leak after cholecystectomy.¹

Bile leak is a well-known complication of cholecystectomy. It occurs in approximately 1.1% of patients who undergo laparoscopic cholecystectomy.² Intraoperative complications, which include bile duct injuries such as lacerations and transection, gallbladder spillage or perforation, bleeding, hepatic laceration, and leakage from the duct of Luschka, were reported in 36% of patients.² The presence of an intraoperative complication increases the likelihood of a bile leak after cholecystectomy.² Fortunately, the incidence of biliary complication after cholecystectomy seems to have reached a plateau. A retrospective study from a high-volume tertiary referral center that evaluated the frequency of both bile leak and other biliary complications after laparoscopic cholecystectomy detected by endoscopic retrograde cholangiopancreatography (ERCP) revealed that the incidence static over a 10-year period.³

Patients with bile leak after cholecystectomy commonly present with abdominal pain, tenderness, fever, and persistent

bile drainage from a surgically placed drain or T tube tract. Bile leak after cholecystectomy is usually detected within the first postoperative week, but could be delayed for up to 6 weeks.¹⁻³ Transabdominal ultrasonography, computed tomography, cholescintigraphy, and/or ERCP can be used for diagnosis. ERCP can demonstrate the site of the bile leak in nearly 98% of patients.² Also, it enables detection of concomitant bile duct stones and strictures. The most common site of bile leak is the cystic duct remnant, followed by the duct of Luschka or peripheral intrahepatic duct, and the common bile duct.^{1,4,5} Endoscopic management of the bile leak is highly successful, with a success rate of 88% to 93%.^{1,4,5} Two main goals of endoscopic management are 1) to eliminate the pressure gradient across the sphincter of Oddi and 2) to bridge and close the leak site.² These goals can be accomplished by endoscopic bile duct stent placement with or without sphincterotomy. In some patients, sphincterotomy with temporary nasobiliary drainage will result in successful resolution of the bile leak. Most studies on the endoscopic management of the bile leak placed the stent for approximately 4 to 6 weeks.^{1,2,4,5} Because the endoscopic approach enables both diagnosis and treatment in a single session and is less invasive, it is often the optimal initial modality used. However, if the bile leak persists after optimal endoscopic therapy, the presence of the duct of Luschka should be suspected and investigated, which often requires surgical management.^{1,5}

Most studies on the outcome of the endoscopic management of bile leak after cholecystectomy were published from institutions in North America.^{2,5} There have been two retrospective studies on the outcome of the endoscopic management of bile leak after cholecystectomy in the Korean population.^{4,6} These studies included 22 and 23 cases between 1998 and 2006. The study by Kim and Kim¹ contributed to existing knowledge in this field and included a greater number of cases

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with bile leak after cholecystectomy than those included in previous studies.

As the authors already pointed out, an inherent limitation of the study by Kim and Kim¹ is its retrospective design. Because bile leak after cholecystectomy is a rare complication that occurs in various anatomic locations, it is difficult to design and conduct a larger scale, prospective study to investigate the optimal endoscopic management. In addition, the actual incidence of bile leak after cholecystectomy cannot be determined because the total number of cholecystectomies is not known in the study. A rough estimate would be 0.64 bile leaks per 100 ERCPs, extrapolating from the authors' statement that there were more than 5,000 cases of cholecystectomy during the study period. Head-to-head comparison is difficult, but the estimated incidence is similar to that from a retrospective case series on the frequency of bile leak after laparoscopic cholecystectomy detected by ERCP.³

The role of biliary endoscopists remains crucial in the early detection and management of bile leak after cholecystectomy, although bile leak after cholecystectomy is rare with an incidence that seemed to have reached a plateau since the 1990s.³ Also, endoscopic management is successful in more than 90% of cases, and safe when performed by skilled biliary endoscopists.^{1,4,5} Although the specific technique of laparoscopic cholecystectomy is not revealed, it is most likely three-port con-

ventional laparoscopic cholecystectomy. With the increasing use of single-port laparoscopic cholecystectomy in recent years, it would be interesting to reevaluate the frequency and anatomic distribution of bile leak, along with the role of ERCP in the management of bile leak after cholecystectomy.

Conflicts of Interest

The author has no financial conflicts of interest.

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