

## **Dual-channel drainage to rescue patients with severe cystic duct stump leakage after surgery.**

**Xu-En Li<sup>1</sup>, Yeu Zhou<sup>2</sup>, Chao-Jun Kong<sup>3</sup>, Zhong Jia<sup>2\*</sup>, Jie Ni<sup>2</sup>**

<sup>1</sup>Cixi City Longshan Hospital, Ningbo, Zhejiang, PR China

<sup>2</sup>Department of Hepatopancreatobiliary Surgery, Hangzhou First People's Hospital, Nanjing Medical University Affiliated Hangzhou Hospital, Hangzhou, Zhejiang, PR China

<sup>3</sup>Zhejiang Chinese Medical University, Fourth Affiliated Clinical Hospital, Hangzhou, Zhejiang, PR China

*Accepted on March 13, 2018*

### **Letter to the Editor**

Undoubtedly, laparoscopic cholecystectomy (LC) has become a “golden standard” for majority of choledithiasis. But cystic duct stump leakage with high-volume flow after LC will replete with challenge due to potential risks of acute peritonitis's or even septic shock.[1] The possible causes of the complication include three aspects in my view of points:

A. Improper closure of cystic duct remnant: Generally, unskilled surgeons more likely lead to it in early learning curve (i.e. incomplete “naked” Calot triangle or undesired diathermy burn of cystic duct) [2].

B. Secondary to further inflammatory necrosis: Even for senior surgeons, the potential risks of closure-loosen of cystic duct stump occurs in a delayed time due to regional infection worsens or local edema reduced.

C. Distal occlusion to cystic duct: Residual stones including interwall stone of cystic duct stump and common bile duct stone may increase cystic duct pressure through bile accumulation and refluxing of intestinal juice.

In any way, the key to success is to early identify the etiology and make preliminary evaluation on severity of bile leakage. Computed tomography of abdomen and MRCP are essential to help better assessment-making of cystic duct stump. Whatever you found, timely adequate drainage of abdominal fluid accumulation really does matter to avoid reoperation. It's very important to place nasobiliary tube that is favorable with decompression of bile duct [3]. Ultrasound-guided percutaneous catheter drainage is also an essential practical step to improve symptoms of biliary peritonitis's. Otherwise, patients' loss may outweigh their gain on the initial goal of minimally invasive surgery and cosmetic advantage. If

possible, residual stones might be removed by using spy-glass tool. The conservative therapeutic period usually needs 4~6 w to promise natural complete closure of cystic duct stump by itself.

Overall, severe cystic duct stump leakage can be complete cured if making an early, dual-channel drainage mentioned above.

### **References**

1. Mehmedovic Z, Mehmedovic M, Hasanovic J. A rare case of biliary leakage after laparoscopic cholecystectomy-diagnostic evaluation and nonsurgical treatment: a case report. *Acta Informatica Medica* 2015; 23: 116.
2. Eisenstein S, Greenstein A J, Kim U. Cystic duct stump leaks: after the learning curve. *Arc Surg* 2008; 143: 1178-1183.
3. HIMAL HS. The role of ERCP in laparoscopic cholecystectomy-related cystic duct stump leaks. *Surg Endosc* 1996; 10: 653-655.

### **\*Correspondence to**

Zhong Jia

Department of Hepatobiliary Surgery

Hangzhou First People's Hospital

Nanjing Medical University Affiliated Hangzhou Hospital

Hangzhou

Zhejiang

PR China