

### **Thermal injuries of the bile ducts during laparoscopic cholecystectomy.**

**Introduction.** One of the causes of damage to the BD during laparoscopic cholecystectomy (LCE) is thermal injury, which can be diagnosed intraoperatively, soon after surgery or delayed, weeks or even months after LCE.

**Aim.** Clarify the frequency, types, clinical presentation and methods of treatment of thermal injuries of BD in LCE.

**Materials and methods.** We carried out a retrospective analysis of cases of thermal injuries of the BD according to the materials of our institution.

**Results.** 1990 LCE were performed for the period of 2013-2018. BD injuries were in 5 (0,25%) patients, of which in 3 (0,16%) cases a common bile/hepatic duct strictures were detected. The hepaticoholedochus stricture in all cases manifested as jaundice and cholangitis and developed in terms from 4 to 14 months from the moment of the first operation. All three patients with strictures were operated. Complications in the postoperative period were not marked. The maximal observational period was 5 years.

By the nature and timing of manifestation BD injuries during LCE, they can be classified into three types: 1. BD perforation with bile-leakage intraoperatively; 2. thermal damage of the BD with the development of necrosis of the wall and perforation in the early postoperative period; 3. development of BD strictures a few months after LCE. The treatment of these injuries differs fundamentally as well. Patients with intraoperatively detected bile leakage may undergo a primary correction. In the second type of thermal damage, surgeon initially has to fight with peritonitis, and only then solve the problems of reconstruction. In case of the stricture, two treatment options are possible: endoscopic stenting or surgical reconstruction. The choice of method is based on the localization and length of the stricture, the severity of the patient's condition, possibilities of the medical institution.

**Conclusions.**

1. Occurred rarely, thermal BD injuries during LCE lead to the severe complications.
2. Knowledge of the possible causes and types of thermal BD injuries will help to avoid these complications and choose correct treatment options.