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SEVERITY-GUIDED CHOICE OF SURGICAL STRATEGY AND
BAILOUT OPTIONS IN COMPLICATED ACUTE CHOLECYSTITIS

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Abstract. *Complicated acute cholecystitis (gangrene, empyema, perforation, pericholecystic abscess, Mirizzi syndrome, concomitant choledocholithiasis and cholangitis) carries a high risk of bile duct injury and postoperative morbidity. Current guidelines and reviews were analysed to outline a stepwise, severity-guided strategy. Early laparoscopic cholecystectomy suits fit patients with mild or moderate disease; in severe disease or prohibitive operative risk, gallbladder drainage followed by delayed surgery is preferred. When the critical view of safety cannot be achieved, subtotal cholecystectomy or timely conversion should replace forced dissection of Calot's triangle. Concomitant common bile duct stones are managed in one or two stages depending on local expertise and the patient's condition.*

Keywords: *acute cholecystitis; Tokyo Guidelines; laparoscopic cholecystectomy; critical view of safety; subtotal cholecystectomy;*

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percutaneous cholecystostomy; choledocholithiasis.

Background. Acute cholecystitis is one of the most frequent reasons for emergency abdominal surgery. Its complicated forms – phlegmonous and gangrenous cholecystitis, empyema, perforation with localised or diffuse peritonitis, paravesical infiltrate or abscess, Mirizzi syndrome, and concomitant choledocholithiasis with cholangitis – are characterised by inflammation spreading beyond the gallbladder wall. In these patients, distorted anatomy of the hepatocystic triangle raises the risk of bile duct injury, and standard treatment algorithms often fail [1, 2].

Aim. To summarise current evidence on choosing the surgical strategy in complicated acute cholecystitis according to disease severity and intraoperative difficulty.

Materials and methods. International guidelines (Tokyo Guidelines 2018; the multi-society Safe Cholecystectomy guideline) and recent narrative reviews on acute cholecystitis, difficult cholecystectomy, gallbladder drainage and choledocholithiasis were analysed.

Results. *Step 1 – severity and fitness for surgery.* The Tokyo Guidelines 2018 link the timing and type of intervention to the severity grade and the patient's comorbidity. In grade I and II disease, early laparoscopic cholecystectomy by an experienced surgeon is recommended when the Charlson comorbidity index is ≤ 5 and ASA physical status is ≤ 2 . In grade III disease, early surgery is reserved for selected patients in advanced centres; the others receive urgent or early gallbladder drainage followed by delayed cholecystectomy once their condition improves [1]. Laparoscopic intervention is considered most favourable during the first 72 hours from onset. Delayed admission, older age, purulent-destructive forms and severe comorbidity worsen the prognosis.

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Step 2 – drainage as a bridge. Percutaneous cholecystostomy is an effective and safe option for patients with prohibitive operative and anaesthetic risk. It is used either as definitive treatment or as a bridge to interval cholecystectomy, which reduces the risk of recurrent biliary events in patients who later become fit for surgery [3].

Step 3 – intraoperative bailout. The critical view of safety should be sought in every laparoscopic cholecystectomy. When it cannot be achieved and the anatomy cannot be clarified by other means, subtotal cholecystectomy is preferred to total fundus-first cholecystectomy [4]. Conversion to open surgery remains indicated in diffuse peritonitis, dense inflammatory infiltrate or when even a partial resection is not feasible; it should be decided early and not regarded as a failure [5].

Step 4 – common bile duct stones. Single-stage (laparoscopic cholecystectomy with common bile duct exploration or intraoperative ERCP) and two-stage (ERCP plus cholecystectomy) approaches give comparable stone clearance and morbidity; the single-stage approach shortens hospital stay and is preferred where expertise is available, whereas a staged approach is more appropriate in septic cholangitis [6].

Conclusions. 1. In complicated acute cholecystitis, the surgical strategy should be chosen stepwise: severity grade and comorbidity determine the timing (early surgery or drainage and delayed surgery), intraoperative anatomy determines the extent (total or subtotal cholecystectomy, conversion), and the presence of choledocholithiasis determines the sequence of biliary interventions. 2. Planned bailout options – subtotal cholecystectomy, early conversion and gallbladder drainage – are key tools for preventing bile duct injury and reducing morbidity.

Use of artificial intelligence. An artificial intelligence tool (Claude, Anthropic) was used to structure and edit the text, translate the abstracts and

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check bibliographic data; the literature analysis, interpretation and conclusions belong to the author, who reviewed the final text and takes responsibility for it.

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