



ANAESTHETIC MANAGEMENT OF A HIGH-RISK CARDIAC PATIENT WITH OBSTRUCTIVE BILIOPATHY FOR EMERGENCY ERCP

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ABSTRACT Obstructive biliopathy, primarily driven by choledocholithiasis and extrinsic compression, represents a critical spectrum of hepatobiliary disease. When complicated by acute cholangitis or severe gallstone pancreatitis, it constitutes a medical emergency. This paper presents the anesthetic management of a 52-year-old male, with multiple comorbidities including Ischemic Heart Disease (IHD) with a previous Drug-Eluting Stent (DES) and severely altered liver function presenting for emergency Endoscopic Retrograde Cholangiopancreatography (ERCP). This case highlights the critical balance required to maintain hemodynamic stability and myocardial oxygen demand-supply in the face of obstructive jaundice and potential coagulopathy.

KEYWORDS : Obstructive Jaundice, ERCP Anaesthesia, Emergency, Drug Eluting Stent(DES)

INTRODUCTION

Obstructive biliopathy is a pathological condition resulting from partial or complete obstruction of the biliary tract, leading to impaired bile flow, cholestasis and progressive hepatocellular dysfunction. Bile is essential for lipid digestion, absorption of fat-soluble vitamins and elimination of endogenous and exogenous substances. Interruption of its normal flow results in accumulation of bile acids, bilirubin, and other potentially hepatotoxic metabolites, which exert deleterious effects on hepatic, renal, and systemic physiology. The etiology of obstructive biliopathy encompasses a broad spectrum of benign and malignant conditions. Benign causes include choledocholithiasis, postoperative biliary strictures, chronic pancreatitis-related strictures and inflammatory conditions such as primary sclerosing cholangitis. Malignant obstruction most commonly arises from carcinoma of the head of the pancreas, cholangiocarcinoma, gallbladder carcinoma, ampullary carcinoma, and metastatic lymphadenopathy compressing the biliary tree.

Clinically, patients typically present with progressive jaundice, pruritus, pale stools, dark urine, anorexia, and weight loss. Superimposed infection may lead to acute ascending cholangitis, characterized by fever, right upper quadrant pain, and jaundice (Charcot's triad) and in severe cases, hypotension and altered mental status (Reynolds' pentad). Biochemically, obstructive biliopathy is characterized by conjugated hyperbilirubinemia, disproportionate elevation of alkaline phosphatase and gamma-glutamyl transferase and variable increases in aminotransferases. Prolonged cholestasis is associated with endotoxemia, impaired reticuloendothelial function, increased intestinal permeability and systemic inflammatory response, thereby increasing susceptibility to sepsis and multiorgan dysfunction. Imaging plays a central role in diagnosis and etiological delineation. Ultrasonography is widely used as an initial screening tool to detect biliary dilatation and gallstones. Magnetic resonance cholangiopancreatography provides non invasive visualization of the biliary anatomy and level of obstruction, while contrast-enhanced computed tomography is valuable for evaluating pancreatic and periampullary malignancies and staging disease. Endoscopic retrograde cholangiopancreatography serves both diagnostic and therapeutic purposes, enabling biliary decompression, stone extraction and stent placement. Percutaneous transhepatic biliary drainage or surgical bypass may be required in selected cases. Definitive management of obstructive biliopathy is based on timely biliary decompression and treatment of the underlying cause.

Case Report

A 52-year-old male patient (60kg) was admitted with complaints of right hypochondriac pain for one month, progressive jaundice, nausea and vomiting for 10 days. On eliciting history patient was known case of diabetes mellitus (HbA1c-6.4%), hypertension and ischemic heart disease. He had a history of drug eluting coronary stent placement 5 years back. On investigation obstructive biliopathy in form of sludge stone complex involving mid and lower CBD for which emergency

ERCP was indicated. Preoperative haematological laboratory findings within normal limit with raised WBC count-12400/mm³, total bilirubin level 22.1mg/dl (direct-17.1mg/dl, indirect-5.0mg/dl), serum glutamic pyruvic transaminase -74IU/L. Renal function test were within the normal range. Cardiac profile suggesting ejection fraction 40-45%, Septoapical lateral wall hypokinesia, mild TR, type I diastolic dysfunction with electrocardiography showing q wave in lead II, III, aVF.

After standard monitorization (pulse oximeter, non-invasive blood pressure, body temperature, random blood sugar) of the patient, who was transferred to the operating room, peripheral vascular access was established on the dorsal aspect of the right hand using 20-gauge cannula. Ondansetron (4mg), Glycopyrrolate (0.2mg), Midazolam (1mg), etomidate (16mg) were administered for anaesthesia induction. No complication was encountered during intubation procedure. Considering requirement of prone position after intubation additional peripheral vascular access was established on the dorsal aspect of the left hand using a 20-gauge cannula. Atracurium (25mg) was administered for neuromuscular blockade, providing satisfactory muscle relaxation and optimal surgical conditions. Maintenance of anaesthesia was provided by Dexmedetomidine infusion and 0.6-1.0 MAC (minimal alveolar concentration) sevoflurane. The surgery lasted for 150 minutes. At the end of the procedure, residual neuromuscular blockade was antagonized with neostigmine 2.5mg and glycopyrrolate 0.4mg and the patient's trachea was extubated with no evidence of gum bleeding. The patient was shifted to recovery area. In the first 24 h after surgery, the patient remained hemodynamically stable.

CONCLUSION

Emergency ERCP in patients with obstructive biliopathy and significant cardiac comorbidities presents a complex anaesthetic challenge. Coexisting ischemic heart disease, prior drug-eluting stent placement, reduced left ventricular function and hepatic dysfunction necessitate meticulous perioperative planning and vigilant monitoring. In such high-risk patients, anaesthetic goals include preservation of hemodynamic stability, avoidance of myocardial ischemia and minimization of drug-induced hepatic stress.

This paper presents that a carefully tailored anaesthetic approach using cardio stable induction agents, balanced anaesthesia with dexmedetomidine and low-dose volatile agents and strict intra-operative monitoring can facilitate safe conduct of emergency ERCP. Early biliary decompression combined with judicious anaesthetic management contributes to improved outcomes. Individualized anaesthetic strategies and a multidisciplinary approach remain pivotal in optimizing perioperative safety in high-risk cardiac patients undergoing emergency endoscopic procedures.