SELECTION OF BILIARY DECOMPRESSION METHOD FOR TREATMENT OF OBSTRUCTIVE JAUNDICE IN PATIENTS OF DIFFERENT AGE GROUPS

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Introduction: According to WHO, obstructive jaundice is one of the most common diseases observed in 10-15% of the world's population [1, 2]. The development of minimally invasive techniques allowed to expand indications and possibility of performing surgeries in patients suffering from obstructive jaundice [3, 4]. However, the optimal method of biliary decompression for treatment of bile duct obstruction remains unclear.

The aim: To study the efficiency of minimally invasive and open methods of biliary decompression in treatment of obstructive jaundice in patients of different age groups.

Materials and methods: In the period from 2002 to 2020 240 patients with obstructive jaundice received treatment. 160 (66.7%) patients were females and 80 (33.3%) patients were males. The patients were divided by age according to WHO recommendations. There were 19 (7.9%) patients of a younger age, 63 (26.2%) patients of a middle age, 86 (35.8%) elderly patients, 67 (27.9%) senior patients, and 5 (2.1%) long-livers. The average age was 62 ± 6.0 years. The duration of obstructive jaundice up to 7 days was diagnosed in 87 (36.2%) patients, from 7 to 14 days – in 62 (25.8%) patients, from 14 to 21 days – in 30 (12.5%) patients, from 21 to 28 days – in 36 (15.0%) patients, and more than 28 days – in 25 (10.4%) patients. The average duration of obstructive jaundice was 20 ± 3.7 days.

The obstructive jaundice underlying diseases were: choledocholithiasis – in 142 (59.2%) patients, Myrizzi`s syndrome – in 15 (6.2%) patients, common bile duct stricture – in 7 (2.9%) patients, stenotic papillitis – in 19 (7.9%) patients, chronic fibrous pancreatitis – in 10 (4.2%) patients, pancreas head cyst – in 5 (2.1%) patients, duodenal ulcer penetrated in hepatoduodenal ligament – in 2 (0.8%) patients, cancer of the pancreas – in 23 (9.6%) patients, cancer of the major duodenal papilla – 5 (2.1%)

patients, cancer of the bile ducts – in 8 (3.3%) patients, cancer of the gallbladder – in 2 (0.8%) patients, and liver metastases – in 2 (0.8%) patients.

Results and discussion: Two-stage minimally invasive surgical procedures were performed on 95 (39.6%) patients of older age groups with bilirubin level higher than 200 mcmol/L, obstructive jaundice duration of over 14 days, concomitant diseases in the phase of decompensation. At the first stage in 25 (10.4%) cases in the presence of bile stones of up to 10 mm in diameter, incomplete endoscopic papillosphincterotomy (up to 10 mm) was performed. A complete endoscopic papillosphincterotomy (over 10 mm) was performed in 18 (7.5%) patients. This made it possible to carry out lithoextraction of Dormia basket. Mechanical lithotripsy was performed in 13 (5.4%) cases with bile stones having the dimensions of 10-20 mm. Then the fragmented stones were removed by means of Dormia basket. Endoscopic papillosphincterotomy was also performed in 19 (7.9%) patients with stenosing papillitis. Due to the presence of obstructive jaundice, repeated gradual endoscopic papillosphincterotomy were performed because rapid biliary decompression led to the progression of the liver failure. In case of purulent cholangitis, a nasobiliary drainage was performed in 20 (8.3%) patients, which made it possible to decompress and sanitation bile ducts. Laparoscopic cholecystectomy was performed at the second stage after liquidation of obstructive jaundice and purulent cholangitis.

Single-stage minimally invasive surgical procedures were performed on 31 (12.9%) young and middle aged patients with bilirubin level lower than 200 mcmol/L, obstructive jaundice duration of less than 14 days, compensated or subcompensated concomitant diseases. In the presence of bile stones of up to 5 mm in diameter, laparoscopic cholecystectomy and lithoextraction were performed through cystic duct stump by means of Fogarty balloon catheter in 10 (4.2%) cases. In the presence of Mirizzi's syndrome type I in 8 (3.3%) patients laparoscopic cholecystectomy was performed with external drainage of the common bile duct. Endobiliary retrograde stenting (stent diameter was 7 Fr) were performed: stricture of the terminal common bile duct – in 3 (1.2%) cases, cancer of the major duodenal papilla – in 5 (2.1%) patients, and cancer of the pancreas – in 5 (2.1%) cases. The stent encrusted with bile acid salts was replaced in 3-4 months.

Single-stage open surgeries on bile ducts were performed on 114 (47.5%) patients of different age groups. Open cholecystectomy with choledocholithotomy was performed in 29 (12.1%) cases in the presence of bile stones of up to 20 mm in diameter. A probe-obturator for extrahepatic bile ducts (patent of Ukraine No. 104826) was used to perform lithoextraction with futher graduated decompression of bile ducts during the postoperative period. 38 (15.8%) of the patients with obstructive jaundice of the non-tumor genesis, a choledochoduodenoanastomosis was formed using an intraoperative technique for prevention of reflux of duodenal contents (patent of Ukraine No. 85986). 6 (2.5%) of the patients with cancer of the pancreas, supraduodenal choledochoduodenoanastomosis was formed. Which provided prolonged decompression of the bile ducts. 11 (4.6%) of the patients with obstructive jaundice of the non-tumor genesis, a combined areflux hepaticojejunoduodenostomy (patent of Ukraine No.112735) was formed. 18 (7.5%) of the patients with obstructive jaundice of the tumor genesis, Roux-en-Y hepaticojejunostomy was formed. In patients

with pancreatic cancer, pancreaticoduodenal resection was performed in 4 (1.7%) cases and antegrade stenting of the common bile duct – in 4 (1.7%) of the patients. Also antegrade stenting of the common bile duct was performed in 2 (0.8%) patients due to the presence of cancer metastases in the liver. In 2 (0.8%) patients with duodenal ulcer penetrated in hepatoduodenal ligament, excision of the ulcer with common bile duct plastic on T-drainage was performed.

Complications after 126 minimally invasive surgeries were observed in 7 (5.6%) cases: in the form of clipped common bile duct in 1 (0.8%), cystic duct stump inefficiency in 2 (1.6%), acute pancreatitis in 2 (1.6%), and haemorrhage from the major duodenal papilla after endoscopic papillosphincterotomy in 2 (1.6%). There were no fatalities. Complications after 114 open surgeries were observed in 13 (11.4%) cases: injury of the common bile duct in 1 (0.9%), cystic duct stump inefficiency in 3 (2.6%), choledochoduodenoanastomosis insufficiency in 3 (2.6%), hepaticojejunoanastomosis insufficiency in 2 (1.7%), and cholemic bleeding during the postoperative period in 2 (1.7%). 2 (1.7%) patients with obstructive jaundice died, cause of death was transmural myocardial infarction.

Complications after minimally invasive surgeries were observed in 7 (5.6%) patients and in 13 (11.4%) patients after open surgeries ($p < 0.05$).

Conclusions: 1. The use of minimally invasive methods of biliary decompression in patients of different age groups with bile duct obstructions allows to reduce the frequency of postoperative complications down by 2 times ($p < 0,05$).

2. Two-stage surgical technique is given priority in treatment of obstructive jaundice in patients of the older age groups. Single-stage correction is recommended for young and middle aged patients with bilirubin level lower than 200 mcmol/L, obstructive jaundice duration of less than 14 days, compensated or subcompensated concomitant diseases.

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