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Laparoendoscopic Surgery in the Treatment of Patients with Cholecystocholedocholithiasis

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Abstract The availability of laparoendoscopic rendezvous is currently limited in most hospitals due to the following main reasons: unresolved organizational problems, the presence in one operating room of equipment complexes for video laparoscopic surgery, oral manipulative video endoscopy and X-ray television, the need for additional involvement of relevant specialists in the operation, X-ray exposure of the patient and surgical team. The presented literature data demonstrate the advantages of the laparoendoscopic approach in the treatment of patients with a combination of stones in the gall bladder and common bile duct, but unresolved logistical problems hinder the development of LERV.

Keywords Gallstone disease, Cholecystocholedocholithiasis, Laparoscopic endoscopic surgery

Combined laparoendoscopic operation for cholecystocholedocholithiasis was first described by Deslandres et al. [10] in 1993 year. After isolating the elements of Calot's triangle, they incised the bladder duct And antegrade carried out endoscopic string through BSDC V duodenum gut. Co sides lumen DPK under control duodenoscope string caught endoscopic loop And carried out through working channel of the duodenoscope. Then they passed the sphincterot along the conductor into the BDDC ampulla and papillosphincterotomy was performed. Subsequently we performed choledocholithoextraction under X-ray television control. Originally thismethod Not called wide interest, later years many authors starteduse this approach in your practice. In 2019 La Greca et al. [18] published first review original works And reports O cases complications, complications including about 800 patients, with descriptions of results and comparisons treatment LERV With two others main accessible options operational treatment. The overall effectiveness of EPST during laparoendoscopic rendezvous was 92.3%. Duration of the endoscopic part of the procedure amounted to from 8 before 82 minutes (V average — 35 minutes), A time all procedures LERV ranged from 40 to 360 minutes with an average time of 104 minutes. Coefficient conversions to open operation was 4.7%. Overall mortality and incidence postoperative complications made up 0.37% And 5.1% respectively. Average hospital stay of patients receiving the LERV procedure was 3.9 day (from 2 before 51 day) [17].

Advantages approach LERV were set out big quantity authors, who used and analyzed this method of surgical intervention. Most important advantages By comparison With more popular two-stagetreatment (ERCP with EPST, and then LCE) is to reduce the incidence of complications, especially postoperative pancreatitis, more high frequency success And reduction time stay patient V hospital [6].

Frequency emergence acute pancreatitis after ERCP/EPST hesitates from 1 to 14%, of which 40% of patients may develop a lethal outcome [13]. Multiple attempts cannulation big papilla duodenum have been described as a factor that increases the risk development pancreatitis after ERCP/EPST. One from most important technical factors in the concept of the LERV technique is that it facilitates endoscopic stage of cannulation of the BDK by introducing a guide through cystic duct And general gall duct V duodenum gut, thus providing selective cannulation of the major duodenal papilla and preventing the guidewire from inadvertently entering the pancreatic duct glands. This is the technical advantage provided by laparoendoscopic rendezvous, is of paramount importance, especially in cases with anatomical changes And complex intubation hepaticocholedochus [10].

To others important mechanical factor related With pathogenesis development post-manipulation pancreatitis, is volume And high pressure contrasting substances, accidentally input endoscopist V main pancreatic duct in time cannulation mouth BSDC. Using technique rendezvous, the contrast agent is administered by the surgeon antegrade, through the bladder duct, avoiding straight injections V duct pancreas glands [8].

IN two randomized controlled research (RCT), Vin which LERV was compared with traditional two-stage tactics, it was reported that more low levels amylase V serum at patients, operated V technologyrendezvous [16]. Statistically significant more high average meaning amylase was reported by Tzovaras et al. [12] for a group of patients whowas carried out EPST With subsequent LHE. La Greca And al. [16]

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recorded statistically significant decrease in serum amylase levels in patients group method rendezvous, By comparison With treatment ERCP/EPST. Authors concluded that the effectiveness and safety of the rendezvous method mainly depends from antegrade injections contrasting substances surgeon through cystic duct [19].

Statistically significant reduction in the incidence of acute post-manipulation pancreatitis was reported in two controlled randomized trials studies comparing laparoendoscopic techniques with traditional two-stage treatment [4].

All four meta-analysis, published To present time, confirmed statistical importance more low development acute pancreatitis and other complications after EPST in favor of the Rendezvous technique [3].

Four meta-analyses showed that laparoendoscopic Rendezvous is an attractive option for treating patients with stones general gall duct. This gives advantage V selective intubation common bile duct, especially in cases of difficult cannulation of the major duodenal papilla or when failure primary attempts ERCP. Tzovaras G And al. [12] used technique rendezvous For treatment 22 patients, at which was Although would one unsuccessful attempt ERCP because of availability anatomical changes, V mostly at peripapillary diverticula. Cannulation Common bile duct was achieved in 20 cases. U In two patients, LERV failed because the guidewire could not be passed through cystic duct [17].

In a controlled randomized trial, Morino et al. [16] used the rendezvous method in 9 patients initially randomized to two-stage approach at which Not managed execute ERCP/ EPST. Treatment successfully completed at 8 patients With using laparoendoscopic approach, What indicates on usage technology LERV V quality safe and a relatively simple method of selective cannulation hepaticocholedochus in patients, at which EPST failed [1].

La Greca et al. [16] reported higher overall effectiveness LER technique in relation to CBD clearance compared with preoperative EPST. IN controlled randomized research, comparing LERV method with two-stage treatment, success rates for stone sanitation common bile duct were similar for both treatment approaches [2]. However, as reported by Wang et al. [5] in their meta-analysis, frequency the success rate of CBD cannulation was significantly higher for the rendezvous technique, according to comparison With preoperative EPST (OSH = 2.54, 95% CI: 1.23-5.26; P = 0.01).

Four RCT recorded statistically significant reduction stay V hospital For patients, operated By methodology laparoendoscopic rendezvous, compared with a two-stage approach [4]. Four meta-analyses confirmed that the total hospital stay was significantly shorter when using LERV compared with two-stage treatment [11]. This happens mainly because when two-stage approach required minimum 24-48 h. period expectations, to guarantee absence complications after endoscopic papillosphincterotomy, before how fulfill laparoscopic cholecystectomy.

Technique LERV is yourself combined surgical And endoscopic surgery And was proposed V quality alternative one-stage approach For treatment patients With cholecystocholedocholithiasis.

This method Not received wide confession, because the requires availability surgical And endoscopic brigades V operating room. La Greca And co-authors [16] presented basic flaw method LERV — logistics And organizational challenges for an operation requiring two teams. Lella F. et al. [19] found this technique even more difficult to perform in conditions of an emergency. However, Tzovaras G et al. [12] came to conclusion that LERV can be effective and safe even in emergency situations. It is obvious that, in the era of minimally invasive surgery, we must be resolved any possible Problems With logistics, to methodology laparoendoscopic rendezvous was available at treatment cholecystocholedocholithiasis and its complications, improving clinical results and reducing discomfort patient.

Laparoendoscopic operation tied With additional time approximately 30-45 minutes, which necessary For execution laparoscopic stage - cholecystectomy and cannulation of the cystic duct conductor. Them Not less, This often saves approximately That same time on endoscopic stage, seriously reducing time on cannulation big papillaDPK [15].

Despite on obvious advantages LERV, exists some concern By about technical difficulties execution cholecystectomy due to distension of the stomach and intestines during insufflation in time endoscopic stage operations. For overcoming this Problems was it was proposed to use a special intestinal desufflator, allowing put away surplus gas after graduation endoscopy. Was Also proposed execute How Can more dissection gall bubble in time laparoscopic parts operational interventions before the beginning endoscopic parts [16].

Laparoendoscopic rendezvous known already more 20 years And is attractive alternative two-stage method treatment patients With cholecystocholedocholithiasis. Existing data V benefit LERV are promising and demonstrate major benefits in terms of moreshort hospital stay and selective cannulation of the common bile duct duct. The concept of the rendezvous technique helps to avoid the underlying mechanisms damage pancreas glands, What leads To reduction frequencies emergence EPST-associated pancreatitis. LERV requires basic laparoscopic equipment And skills; the only one additional laparoscopic skill is ability fulfill intraoperative cholangiography.

However, the availability of laparoendoscopic rendezvous is currently time is limited in most hospitals due to the following main reasons: reasons: unresolved organizational problems, availability V one operational hall complexes equipment For videolaparoscopic operations, oral manipulative video endoscopy And X-ray television, the need for additional involvement in the operation relevant specialists, x-ray irradiation patient And surgical brigades.

Submitted literary data demonstrate advantages laparoendoscopic approach in the treatment of patients with a combination of stones in gall bubble And in general gall duct, But, unresolved logistics Problems restrain development LERV. Application given techniques at patients With implemented average risk cholangiolithiasis

on background acute or chronic cholecystitis Not illuminated V literature. These moments appeared starting points for execution present research.

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