

Study of Fast Track Surgery in Patients with Biliary Intestinal Anastomosis in China

Hou Peng, Liu Dao-Ling, Rong Feng-Wei, Chen Song-Lin and Zhou Li-Ming*

Tangshan convalescence area, Jinling Hospital, Nanjing University School of Medicine, China

Abstract

Objective: To investigate the feasibility. Safety and economical aspects of fast-track surgery (FTS) in patients with biliary intestinal anastomosis application security, effectiveness and its advantages.

Methods: 31 patients were randomly divided into FTS group (n=16) and the control group (n=15). Control group using conventional perioperative treatment, guided by the idea of FTS group use the FTS perioperative measures, analysis and comparison of postoperative day 1 bad psychological emotions, exhaust and defecation time, postoperative hospitalization days and the hospitalization expenses and so on. Postoperative complications and adverse reactions in the groups.

Results: Compared with the photographic, FTS group exhaust and defecation time in advance, and shorten hospitalization time, hospitalization expenses reduced ($P < 0.05$), complications and adverse reaction is similar between the two groups has no statistical significance ($P > 0.05$).

Conclusion: Fast-track surgery in patients with biliary intestinal anastomosis, with a safe, effective, economic and other characteristic, can accelerate the rehabilitation of patients.

Keywords: Biliary; Gastrointestinal; Nutrition; Outcomes

Introduction

Fast track surgery (FTS) concept refers to the preoperative, intraoperative and postoperative application has been proven effective methods to reduce stress and operation, patients with complications, accelerate the postoperative recovery [1,2]. At present in colorectal surgery, efficacy and safety of gastric cancer, liver cancer surgery has also been confirmed [3,4]. FTS start is concerned by more and more surgeons. The application of FTS principle in the choledochojejunostomy patients, and to evaluate the safety, effectiveness and advantage.

Materials and Methods

Patient enrolment

Thirty-one patients were implemented choledochojejunostomy in our hospital from January 2011 to December 2015 were. Inclusion criteria: less than 70 years of age, preoperative diagnosis, undergoing biliary intestinal anastomosis in patients without severe organ dysfunction, hypertension, diabetes.

Study design

Thirty-one patients were randomly divided into FTS group and control group (Table I). The FTS group (n=16): 9 male, 7 female, age (46.7 ± 2.2) years. Intrahepatic bile duct stones 12 cases, bile duct cyst 4 cases. The control group (n=15): 9 male, 6 female, age (47.1 ± 1.5) years; Hepatolithiasis 11 cases, bile duct cyst 4. There was no statistically significant difference in gender, age, basic diseases, operation, basic medication etc. between groups ($P > 0.05$). FTS group accepted the FTS treatment. All subjects have signed informed consent (Table I).

Clinical observations

Observational index According to the POMS-SF [5] on patients of questionnaire or question and answer survey score, patients with postoperative first day bad psychological state were compared between the two groups. Patients with exhaust and defecate time, and postoperative length of hospital stay, cost of hospitalization, adverse reaction and complication were record and compared with two groups.

Discharge standards without intravenous fluids, by oral medication that can meet the pain control, normal temperature, after eating no abdominal distension, nausea, vomiting and other discomfort, with their own toilet, the going home desire can be discharged.

Follow-up After discharge within 7 days every day by attending their telephone contact, understanding of the disease and provide medical treatment. Outpatient treatment on a regular basis. 7 days after the surgery, take out stitches outpatient service.

Statistical analysis

The measurement data is represented by mean \pm standard deviation ($x \pm s$), $P < 0.05$ has significant difference, $P < 0.01$ has obviously significant difference.

Results

Two groups of patients were cured. Compared to the control group, postoperative day 1 tension, anxiety, fear and other negative emotions significantly reduced in the FTS group ($P < 0.05$), (Table II).

In the FTS group, exhaust and defecation time is shortened, decreased length of hospital stay, hospitalization costs were reduced, the difference is statistically significant ($P < 0.05$), (Table III).

*Corresponding author: Zhou Li-Ming, Tangshan Convalescence Area, Jinling Hospital (210002), Jiangning district, Nanjing, Jiangsu, China, Tel: 08615298385638; E-mail: 15298385638@163.com

Received July 23, 2016; Accepted August 27, 2016; Published September 05, 2016

Citation: Peng H, Dao-Ling L, Feng-Wei R, Song-Lin C, Li-Ming Z. Study of Fast Track Surgery in Patients with Biliary Intestinal Anastomosis in China. Journal of Surgery [Jurnalul de chirurgie]. 2016; 12(3): 101-103 DOI:10.7438/1584-9341-12-3-2

Copyright: © 2016 Peng H, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Table I: Comparison of perioperative treatment measures between the FTS group and the control group

Measures	FTS group (n=16)	Control group (n=15)
Preoperative education	Preoperative 2d started with health education, psychological nursing, the treatment process, reduce anxiety and fear of mental patients	Routine preoperative 1d conversation, inform surgery, preoperative preparation and its significance
Preoperative fasting	Preoperative fasting 6 h, preoperative 2-4 h. 500 mL 10% glucose drink	Preoperative fasting 12 h, forbidden to drink 6 h.
Catheter	Indwelling after anesthesia, pulling surgery	within 24 h after Preoperative indwelling, postoperative 3 ~ 5d extraction
Nasogastric tube	Indwelling after anesthesia, awake within 6 h after pulling out	Routine preoperative indwelling, ventilation after removal
Bowel preparation	No bowel preparation	The night before surgery or oral cleaning enema for Magnesium Sulfate
Anesthesia	General anesthesia (short acting anesthetic) combined with epidural anesthesia	General anesthesia (short acting anesthetic)
Liquid control	The input amount of per hour is 5 ~ 10 mL/ kg input, after 2500 mL/d or so, after eating, water reduction	Without special attention
Drainage tube	Peritoneal drainage tube indwelling drainage fluid, bile, non-bloody liquid and less than 100 mL/d extraction	Abdominal drainage tube out 5 ~ 7 d after the operation
Postoperative analgesia	Multimodal analgesia, such as epidural analgesia, patient-controlled intravenous analgesia (PCA), oral non-steroidal analgesics.	Opioid analgesics
Get out of bed	Active demand early ambulation, postoperative first bed day 2 h, second days to get out of bed every day at least 6 h.	Voluntary patient ambulation
Postoperative fasting	Early postoperative 6 h started eating, drinking a little water, second day eating semifluid food, transition to a normal diet as early as possible.	Exhaust and defecation after drinking water, gradually return to normal diet

Table II: On the first day after surgery POMS- SF between the two groups ($x \pm s$, score)

Group	n	Nervous	Anxiety	Fear	Depression	Lonely
FTS group	16	4.20 \pm 1.52 Δ	3.61 \pm 1.78*	3.65 \pm 1.56*	3.82 \pm 1.73	3.44 \pm 2.66
Control group	15	5.82 \pm 1.31	4.88 \pm 2.12	5.20 \pm 2.08	4.33 \pm 1.66	3.71 \pm 2.10

*: $P < 0.05$, Δ : $P < 0.01$, compared with the control group.

Table III: Comparison of postoperative recovery between the two groups ($x \pm s$)

Group (hr.)	n (hr.)	Exhaust time (d.)	Defecation time (million)	Hospitalization	Hospital costs
FTS group	16	54.2 \pm 14.3 Δ	88.9 \pm 30.1*	6.0 \pm 1.0*	1.8 \pm 0.3*
Control group	15	70.4 \pm 12.2	101.0 \pm 23.7	7.0 \pm 1.3	2.1 \pm 0.4

*: $P < 0.05$, Δ : $P < 0.01$, compared with the control group.

The incidence of nausea, vomiting, abdominal distension after operation and infection had no statistically significant difference in the two groups ($P > 0.05$), (Table IV). Thirty-one patients were a good quality of life in followed up.

Discussion

FTS concept refers to the preoperative, intraoperative and postoperative application has been proven effective methods to reduce the operation of excitation and complications, accelerate the patient's postoperative rehabilitation. It is the combination of a series of effective measures of the synergy as a result, many measures have been in clinical application, such as perioperative nutritional support, attaches great importance to the oxygen supply, no regular application early nasogastric tube decompression, feeding, growth hormone, minimally invasive surgery, and so on [1,6]. FTS new fasting and eating plan, no bowel preparation, not retained or early removal of all kinds of indwelling catheter, postoperative early activities etc. perioperative treatment measures seem to have the risk of increased postoperative aspiration, pneumonia, anastomotic leakage and abdominal infection and other complications, in patients with biliary enteric anastomosis is safe, effective, worthy of discussion.

Biliary intestinal anastomosis belongs to the biliary tract surgery, because surgery can cause trauma and even life-threatening, patients before there are varying degrees of tension, anxiety, fear and other negative emotions, which is not conducive to postoperative rehabilitation. The traditional preoperative education and psychological nursing is actually limited to relatively simple disease health education and regards, comfort level. It is necessary to further optimize. The FTS treatment of patients to accept, in addition to the

conventional education and psychological nursing, preoperative 2d started to patients and their families with the FTS treatment processes, through the oral and written form the operation will take the treatment and nursing measures, patients and their families gathered in the FTS treatment considerations that FTS treatment has accelerated postoperative body recovery, shorten the hospitalization time, alleviate the negative emotions of patients, reduce the psychological stress. The postoperative day 1 score PMOS-SF results show tension, anxiety, fear and other negative emotions significantly reduced, indicating that the optimization of the FTS operation before education and psychological nursing can significantly reduce or eliminate the negative emotions of patients, reduce the psychological stress in the FTS group. In the past to prevent inhalation pneumonia will preoperative fasting 12h, ban water 4 h as perioperative preoperative preparation of routine, but for a long time of fasting, water easily lead to low blood sugar and insulin resistance and increased intraoperative and postoperative fluid volume and increased stress. European and American modern anaesthesiology guide pointed out that reduce preoperative fasting time to reduce the surgery patient's thirst, hunger, a bad mood and tense, preoperative 6h. Fasting before operation, 2-3 h. eating sugary carbohydrates is not only safe, but also can increase the glycogen content, reduce postoperative insulin resistance, and can shorten the time of hospitalization [7]. This study used preoperative fasting drink 2-4 h. 500 mL 10% glucose solution during anaesthesia without vomiting, aspiration, does not increase the risk of anaesthesia at preoperative 6h in the FTS group., is generally believed that after abdominal surgery patients with anal exhaust before eating. Sagar [8] study shows, abdominal surgery after 6h of small intestine returned to normal peristalsis, postoperative early intestinal liquid began to be absorbed and postoperative 24 h gastric motility has returned to normal. Therefore, exhaust, defecate is not

Table IV: The incidence of adverse events between the two groups

Adverse events	FTS group (n=16)	Control group (n=15)
Nausea (%)	2 (12.5)	2 (13.3)
Vomiting (%)	2 (12.5)	2 (13.3)
Abdominal distension (%)	2 (12.5)	2 (13.3)
Incision infection (%)	1 (6.3)	0
Urinary tract infection (%)	0	1 (6.7)

eating the necessary premise. Postoperative early oral feeding not only does not increase the anastomotic leakage risk [2], but can promote intestinal peristalsis, the maintenance of intestinal mucosa barrier, postoperative gastrointestinal function recovery time of normal early [9,10], reducing the infusion time and accelerate the rehabilitation of patients. The study of postoperative 6h. after drinking a little water, eating for a semi liquid diet for 2 days, to patients can be tolerated, no nausea, vomiting, abdominal distension and other adverse reactions as the standard, the gradual transition to semi liquid diet, normal. 2 patients with postoperative nausea and vomiting, abdominal distension after operation were improved after given symptomatic treatment, not again line of gastrointestinal decompression in the FTS group. There was no complications such as anastomotic leakage, anastomotic bleeding. Incidence of postoperative adverse reaction and complication was not statistically significant in two groups ($P>0.05$). Therefore, FTS new fasting and eating plan in patients with biliary enteric anastomosis peri operative is safe.

Preoperative bowel preparation is designed to remove luminal contents, avoid postoperative abdominal distension, but easily lead to dehydration, nutritional status and intestinal bacteria shift down. Studies have shown that excessive bowel preparation can increase postoperative abdominal infection and the incidence of anastomotic leakage. In addition to biliary enteric anastomosis surgery, hepatobiliary surgery can enter the intestinal tract, especially the lower digestive tract without bowel preparation [11]. Our results show that minimally invasive surgery is the core content of FTS; precise anastomosis technique is the key to avoid anastomotic leakage. At present, biliary enteric anastomosis and technical proficiency has been greatly improved. Part of the biliary enteric anastomosis has been through the stapler, agreement is more safe and reliable [8]. There is no need for routine bowel preparation, but for old years with chronic constipation patients using oral tomato leaf and paraffin oil, glycerine anal therapeutic laxative and no mechanical bowel preparation were more secure. There were not underwent bowel preparation and the incidence of anastomotic leakage in the FTS group. There was no significant difference in postoperative abdominal infection in the two groups [11]. The traditional view of requirements before the operation of abdomen routine indwelling nasogastric tube and prevent postoperative nausea and vomiting, relieve gastrointestinal dysfunction caused by abdominal distension, until postoperative anal exhaust, in order to increase the safety of abdominal surgery. FTS philosophy thought that abdominal surgery not routinely placed nasogastric tube can reduce postoperative patients with oropharyngeal discomfort reaction, reduce the risk of pulmonary infection, patients with early recovery after eating, and does not increase the incidence of postoperative complications of nausea, vomiting, abdominal distension, fistula and so. If intraoperative bloating evident or anesthesia resulted in air into the gastric lumen, the placement of gastric tube in operation, but should strive for removal at the end of surgery [12]. For abdominal distention, nausea and vomiting after eating, also there is no need to immediately gastrointestinal decompression and application of gastrointestinal drugs, symptomatic treatment can not only achieve good results, but also reduce the stress of indwelling gastric tube. To estimate the long operation time can indwelling catheter after anaesthesia, but catheter placement will increase the chance of infection and discomfort, the limitation of activity, without urinary retention in postoperative 24 h extraction.

Conclusion

Fast-track surgery in patients with biliary intestinal anastomosis, with a safe, effective, economic and other characteristic, can accelerate the rehabilitation of patients.

Conflict of interest

Authors have no conflict of interests to declare.

References

- Hobson, Deborah BBSN, Saletnik, Laurie DNP, Wick, Elizabeth C (2016) Get on the fast track to patient recovery. *Nurs Manage* 47: 15-17.
- Jiang ZW, Jie-Shou Li (2009) Fast track surgery under the guidance of the theory of perioperative period. *Fu Bu Wai Ke* 22: 305-306
- Gong yi (2007) Nanjing general hospital with Fast track surgery mode. *China medical news* 8.
- Li YJ, Huo TT, Xing J, An JZ, Han ZY, et al. (2014) Meta-Analysis of Efficacy and Safety of Fast-Track Surgery in Gastrectomy for Gastric Cancer. *World J Surg* 38: 3142-3151.
- Yongrong W (2012) GSES POMS-SF QLQ-C30 technology in cancer patients at rehabilitation stage application. *China Journal of Pharmaceutical Economics* 3: 112-114.
- Kehlet H, Wilmore DW (2008) Evidence-based surgical care and the volition of fast track surgery. *Ann Surg* 248:189-198
- Lau C, Phillips E, Bresee C, Catherine MS, Fleshner, et al. (2014) Early use of low residue diet is superior to clear liquid diet after elective colorectal surgery: a randomized controlled trial. *Ann Surg* 260: 641-647.
- Costi R, Gnocchi A, Di Mario F, Sarli L (2014) Diagnosis and management of choledocholithiasis in the golden age of imaging, endoscopy and laparoscopy. *World J Gastroenterol* 20: 13382- 13401.
- Sagar PM, Kruegener G, Macfie J (1992) Nasogastric intubation and elective abdominal surgery. *Br J Surg* 79: 1127-1131.
- Jakobsen DH, Sonne E, Andearson J, Kehlet H (2006) Convalescence after colonic surgery with fast-track vs conventional care. *Colorectal Dis* 8: 683-687.
- Matson A, Vrakas G, Douglarakis M, Hatzimisios K, Zandes N, et al. (2011) Mechanical bowel preparation before elective colorectal surgery: is it necessary?. *Techn Coloproctol* 15: 59-62.
- Gurusamy KS, Koti R, Davidson BR (2013) T-tube drainage versus primary closure after open common bile duct exploration. *Database Syst Rev* 21: 1-41.