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SURGICAL TACTICS IN CASE OF SUTURE FAILURE IN GASTRIC SURGERY

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ХУЛОСА

Тадқиқот мақсади яра касаллиги хирургиясида ичак чоклари этишмовчилигини профилактикаси ва хирургик даволаш натижаларини яхшилашдир. Беморлар шартли равишида 2 гуруҳга бўлинган (биринчи гуруҳ – 2000 йилгача операция қилинган беморлар, иккинчи гуруҳ – 2000 йилдан бошлаб ҳозирги давргача жарроҳлик амалиёт қўлланган беморлар). Жами жарроҳлик амалиёт қилинган беморларнинг 2% (23 бемор) ўн икки бармоқ ичак чўлтоғи ёки анастомозлар чокларининг этишмовчилиги кузатилган. Ушбу беморларни даволашда биринчи гуруҳда чок этишмовчилигини даволашни анъанавий услублари қўлланган – релапаротомия, дефектни қайта тикиши, шу соҳага «тампон-сигара» келтириб қўйиши, қорин бўшлигини найчалаши. Иккинчи гуруҳда – ўн икки бармоқ ичак чўлтоғини дефект орқали найчалаши, назоэнтерал найчалаши, дуоденал сақламани қўйилган найча орқали фаол аспирация қилиши ва назоэнтерал найча орқали тўлиқ қайтариб қўйиши, энтерал озиқлантириши. Биринчи гуруҳда ўлим ҳолатлари 1,2%, иккинчи гуруҳда – 0,2%.

Калит сўзлар: яра касаллиги, хирургик даволаш, чоклар этишмовчилиги, релапаротомия, назоэнтерал интубация.

THE RELEVANCE OF THE PROBLEM

Among the early postoperative complications in the surgery of peptic ulcer of the stomach and duodenum, the most formidable and having severe consequences is the failure of sutures of the stump of the duodenum, gastroduodenoanastomosis (GDA) and gastroenteroanastomosis (GEA). The failure of the sutures leads to the development of peritonitis (limited or diffuse) or the formation of subdiaphragmatic and intercellular abscesses, duodenal fistulas, the occurrence of acute postoperative pancreatitis and erosive bleeding. Despite the proposed methods of preventing the spread of peritonitis in case of suture failure: nasoduodenal and nasoenteral drainage, installation of a “tampon cigar” in the subhepatic space, repeated suturing of the defect of the stump of the duodenum in various ways, stitching of the transverse colon to the anterior abdominal wall, the mortality rate, when this

РЕЗЮМЕ

Целью исследования явилась профилактика и улучшение результатов хирургического лечения несостоятельности кишечных швов в хирургии язвенной болезни. Больные условно подразделены на 2 группы (первая группа – больные, оперированные до 2000 года, вторая группа – с 2000 года по настоящее время). Из всех больных у 2% (23 больных) наблюдалась несостоятельность швов культи ДПК или анастомозов. В первой группе при релапаротомиях применялась традиционная тактика лечения несостоятельности швов – релапаротомия, реушивание, подведение «тампон-сигары» к месту несостоятельности, дренирование брюшной полости. Во второй группе – дренирование культи ДПК через дефект, назоэнтеральное дренирование, активная аспирация дуоденального содержимого через дренаж и полноценный возврат его через назоэнтеральный зонд и энтеральное питание. В первой группе летальность 1,2%, во второй группе – 0,2%.

Ключевые слова: язвенная болезнь, хирургическое лечение, несостоятельность швов, релапаротомия, назоэнтеральная интубация.

condition occurs, is 20-80%[1,2,4,5]. The high mortality rate is mainly due to the late diagnosis of the complication, ongoing peritonitis after relaparotomy, large losses of the “duodenal cocktail”, as well as errors in surgical technique and tactics[2,3,6]. Therefore, the development of ways to prevent suture failure, the spread of peritonitis after repeated surgery, as well as adequate replacement of losses is an urgent problem in abdominal surgery.

OBJECTIVE

Improving the prevention and treatment results of intestinal suture failure in peptic ulcer surgery.

MATERIALS AND METHODS OF THE RESEARCH

In the clinic of the Department of Faculty Surgery of TMA (The Clinical Hospital No. 1 of the Ministry of Health of the Republic of Uzbekistan) from 1996 to 2023, 1131 patients were operated on for various complications

of peptic and duodenum ulcer disease. Among these patients, 23 had suture failure (stumps of duodenum - 20, GDA - 2, GEA - 1), which amounted 2% in relation to all operated patients, and 12.7% in relation to all early postoperative complications (among 181 early complications). 18 had previously been operated as planned and 5 as urgent indications (ulcer perforation - 2, ongoing bleeding - 3). A retrospective analysis revealed the main causes that led to the failure of the sutures. In our opinion, this is the isolation of giant or low (“difficult”) ulcers of the posterior wall of the duodenum with penetration into the head of the pancreas or hepatoduodenal ligament

from infiltrated tissues and traumatization of pancreatic tissue (due to the “arrogant, unreasonable desire of surgeons to remove the ulcerative substrate at all costs”) - in 16, anastomosis on altered tissues (with suture tension) - in 3, unjustified radicalization of operations - in 4 patients with anemia, hypovolemia, hypoproteinemia and severe concomitant diseases of the lungs, heart and liver.

Thus, technical errors in the course of operations were observed in 16 patients, tactical and related to the general condition of the body - in 7. Among all of patients with suture failure, 13 people were re-operated (Table).

The reasons for repeated surgical interventions

Suture failure	Spilled peritonitis	Limited peritonitis
The stump of the Duodenum	8	2
GDA	1	1
GEA	1	-
Total	10	3

THE RESULTS AND DISCUSSION

Based on the applied tactics of suture failure treatment, the patients were conditionally divided into 2 groups. The first group included 412 patients operated on using one of the Billroth methods before 2000, the second group included 719 patients operated on from 2000 to the present by the same surgical intervention.

In the first group, 11 patients had suture failure (8 of them had repeated sutures), in the second group - in 12 patients (5 of them were re-operated). During repeated operations for the failure of the sutures of the stump of the duodenum in the first group, the traditional tactics of relaparotomy and abdominal sanitation, rinsing with antiseptics, with diffuse peritonitis – installation of drainage tubes for abdominal lavage in the postoperative period and, necessarily, nasoenteral intubation were used. A “tampon cigar” was brought to the duodenal stump and left near it a drainage tube was. Two patients of this group underwent repeated suturing of the stump of the duodenum. Along with this, detoxification, antibacterial and restorative therapy were performed. After relaparotomy, mortality was 1.2% (5 patients) in relation to all operated patients of the first group and 2.7% in relation to all early postoperative complications (among 181 patients).

Based on the analysis of the causes of deaths due to suture failure, we were once again convinced that mortality most often occurs due to loss of duodenal contents and ongoing peritonitis with intoxication phenomena, sometimes with the formation of small intestinal fistulas, erosive bleeding. The reason for this, in our opinion, is the accumulation of duodenal contents in the area of the “tampon cigar” and its spread to other parts of the abdominal cavity with tissue corrosion under the action of duodenal and pancreatic juices. In addition, maceration of the skin around the drainage tubes occurs and it is not always possible to compensate for the loss of duodenal contents. Based on this, since 2000, during repeated operations, we categorically refused to re-suture (form) the

stump of the duodenum and introduce a “tampon cigar” into this area. In addition, since 2002, we have introduced into clinical practice the use of a modified “single-row” interrupted suture at the stages of gastric operations, that is formation of the stump of the stomach and duodenum, formation of anastomoses (“The method of forming of gastroduodenoanastomosis”, patent of the Republic of Uzbekistan IAP No. 03080, 2004). Thus, we currently use the following surgical tactics: In addition, since 2002, we have introduced into clinical practice the use of a modified “single-row” interrupted suture at the stages of gastric operations, that is formation of the stump of the stomach and duodenum, formation of anastomoses (“The method of forming of gastroduodenoanastomosis”, patent of the Republic of Uzbekistan IAP No. 03080, 2004). Thus, we currently use the following surgical tactics:

- To prevent the failure of sutures of the stump of the duodenum, GDA and GEA, a nasoenteric (according to nasoduodenal) probe is left during the primary operation (in order to decompress the upper floor of the gastrointestinal tract or the stump of the duodenum);
- In case of failure of sutures of the stump of the duodenum or GEA with signs of unlimited peritonitis, early relaparotomy and sanitation of the abdominal cavity are performed, a drainage tube is inserted into the cavity of the duodenum with fixation with absorbable suture material (through a defect of insolubility in the stump of the duodenum). A drainage tube is also left in the subhepatic space (it captures the duodenal contents that have entered the abdominal cavity);
- Correction of the position of the nasoenteric probe is performed (if necessary) in order to decompress the upper floor of the gastrointestinal tract (the first 2-3 days), later it is used for enteral feeding. The operation is completed by adequate drainage of the abdominal cavity;
- In the early postoperative period, constant active as-

piration of duodenal contents is carried out through a drainage tube located in the intestinal cavity (starting from the first day). It should be noted that if in the following days of the postoperative period, the duodenal contents begin to be released through the so-called drainage, then a second aspirator is installed there.

- Considering that the duodenal contents contain in large quantities proteins, electrolytes, and enzymes important for the body, after filtration it is returned to the patient through a nasoenteral probe (if possible in full). Along with this, nutrients are introduced through the probe (broths, juices, tea, mineral water and others, in a volume of up to 3-4 liters per day).

An ordinary compressor designed for small fish aquariums is used as an aspirator (Fig. 1). The design of the aquarium compressor is slightly changed (its valves are swapped) and the compressor turns into a “mini-aspirator”. It creates a mild (moderate) suction pressure, which is optimal in such situations (Fig. 2). (The fact is that standard medical aspirators usually create high neg-

ative pressure, that often leads to the suction of tissues around the site with suture failure and unsatisfactorily perform the intended task).

According to this approach to the treatment of suture failure, the accumulation of duodenal contents in the subhepatic, subdiaphragmatic space is excluded and its spread into the abdominal cavity does not occur, maceration of the skin around the drainage tube does not occur. There is a constant decompression of the stump of the duodenum and, thanks to the return of duodenal contents and the introduction of nutrient mixtures into the intestine (through a nasoenteric probe), intestinal peristalsis is restored faster and, most importantly, body losses are reduced. In addition, duodenal fistulas form faster, which later close themselves more often. In addition, duodenal fistulas form faster, which later close themselves more often. In using of this technique, among patients with incompetence of stump sutures, the mortality rate was 0.2% (2 patients) in relation to all operated patients of the second group (out of 719 patients), in relation to all early postoperative complications, the mortality rate was 1.1%.



Fig. 1 An ordinary compressor.

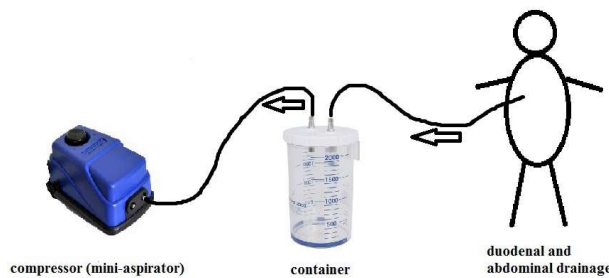


Fig. 2 “Mini-aspirator”.

CONCLUSION

1. In relaparotomies due to the failure of intestinal sutures, the use of a “tampon cigar” and an additional drainage tube does not ensure optimal drainage and does not contribute to limiting the process and rapid formation of a fistula. On the contrary, it often leads to accumulation of duodenal contents in the subhepatic space and thereby contributes to its spread to other parts of the abdominal cavity. With this method of treatment, the mortality rate was 1.2%.

2. The installation of a drainage tube into the stump of the duodenum with constant moderately active aspira-

tion and the presence of subhepatic drainage contributes to the delineation of peritonitis and the formation of a narrow duodenal fistula, maceration of the skin around the drainage tube is excluded. With this method, the mortality rate was 0.2%.

3. Due to the full return of duodenal contents obtained from drainage tubes during active aspiration, through a nasoenteral probe and early enteral feeding, losses of electrolytes, valuable enzymes, and the number of intravenous infusions are reduced. This significantly reduces the number of bed days and material costs for this category of patients.

4. The proposed tactic of “active aspiration and return” can also be used without relaparotomy in patients with intestinal suture failure, provided that there are normally functioning drainage tubes and a pre-installed nasoenteral feeding probe (or the probe can be install endoscopically!).

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