

Modified Method of Choledocho-Duodenal Anastomosis

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ABSTRACT

The choledocho-duodenostomy is one of the widespread surgical methods among those that have been used for treatment of bile duct compression. This is confirmed by the facts; most of surgeons prefer the above-mentioned method in practice. However, the choledocho-duodenostomy is frequently accompanied by complications of functional character. In order to reduce the number and frequency of post choledocho-duodenostomy complications, has been suggested by us the modernized variant of one of the widely used methods of choledocho-duodenostomy - Iurash-Vinogradov' method. The modernized variant of method suggests connection of wall of duodenum with choledochus. A total of 41 patients were operated using the above-mentioned modernized method. Post-operation complications were detected in 4 cases. Complications were not related with the method of operation. In one case defective suture of anastomosis developed, which was closed by appropriate treatment. The lethal outcomes have not been detected.

KEYWORDS: *chronic pancreatitis, choledocho-duodenal anastomosis, choledocho-duodenostomy*

Choledocho-duodenostomy is one of the widespread methods of biliary duct decompression. Many authors prefer the use of this method, especially in case of such pathologies as tubular narrowing of distal part of the choledochus and chronic indurational pancreatitis [3,5,7,8]. Some authors [1,2,6] support wider use of this method. It should also be noted that complications of functional character [4] are not infrequent after the mentioned operation, which, along with its wider use, puts on the agenda the issue of the method's modernization.

We have made our aim to modernize one of the widespread methods of choledocho-duodenal anastomosis that is Iurash-Vinogradov's method, in order to minimize post-operation complications.

MATERIAL AND METHODS

Modernization of one of the recognized Iurash-Vinogradov's operation method is realized by us in the following way: section of the duodenum and choledochus walls is made according to Iurash-Vinogradov's method, as to other technical moments, our method is quite different from the mentioned one. For exact adaptation of anastomosis' edges and selection of optimal diameter for the anastomosis, a preparatory stage should be carried out, which implies necessary treatment of duodenum wall section. For this opposite the choledochus and at the distance of 2-3 mm from the last segment of its supra-duodenal part serous-muscular layers of the duodenum are opened in the width. We consider 12-15 mm to be the optimal length of the section. Rational utilization of the mentioned length section is sufficient for the normal functioning of the anastomosis. After the section of the serous-muscular membranes the sub-mucous membrane is exposed and the wound obtains an oval form. After the submucous membrane is exposed, stitches are carried at the edges of muscular membrane through the sub-mucous and mucous membrane into the gut opening, which from the opening go through the same mucous and sub-mucous membranes in the opposite direction. Next to the first stitch, the second one goes through sub-mucous and mucous membranes. So little by little alongside the edges of the sectioned gut sub-mucous and mucous membranes are stitched around the wound (Fig.1). The distance between the stitches should be minimal. About 6-7 stitches are put altogether. After the

stitches are knotted the "excessive" sub-mucous and mucous membrane are excised and, consequently, the duodenum gap is opened (Fig.2). The mentioned stitches enable to fix the mucous membrane to the sub-mucous membrane, which excludes prolapse of the mucous membrane into the wound and considerably facilitates formation of the anastomosis.

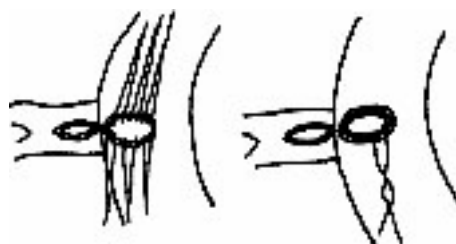


Fig.1 Little by little alongside the edges of the sectioned gut sub-mucous and mucous membranes are stitched around the wound

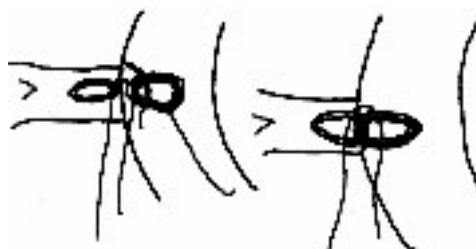


Fig.2 After the stitches are knotted the "excessive" sub-mucous and mucous membrane are excised and, consequently, the duodenum gap is opened



Fig.3 The first stitch is put between the closest segments of the wound, and then the sectioned edges of the gut and the choledochus are connected

After completion of the preparatory stage on the duodenum wall the gap of the choledochus is opened. The choledochus is opened longwise up to the edge of the duodenum wall after which the formation of the anastomosis is carried out. The first stitch is put between the closest segments of the wound, and then the sectioned edges of the gut and the choledochus are connected (Fig.3). The stitches are put out of the opening and then are knotted from the openings' side. As a material it is preferable to use chromium-covered thin Catgut or dissolvable Vickryl thread. The stitches are put both from the left and from the right sides so as to form the both edges of the anastomosis simultaneously. The stitches go through all the layers of the choledochus at the distance of 2 mm from its edge, while in the gut edge the suture goes only through serous-submucous membrane. The last stitch connects the most distant segments of the gut and the choledochus. The last stitch is knotted from the outward side. The anastomosis described above has several advantages before the existing ones, namely:

1. By means of one-row suture maximum permeability can be achieved with minimum section.
2. Connection of gut wall and choledochus by serous-submucous stitches exclude traumatism and infection of mucous membrane, which enables formation of comparatively more perfect anastomosis with fine edges.
3. The mentioned narrow anastomosis with fine edges is of valve type and is considered by us the best prophylaxis against refluxes.

RESULTS AND DISCUSSION

41 patients were operated by the mentioned method in clinic. Among them women (32) prevailed over the men. The age of the patients was from 20 to 78 years. The patients were operated with the following diagnoses:

1. Calculous cholecystitis, choledocholithiasis, mechanical jaundice – 8;

2. Chronic calculous cholecystitis, choledocholithiasis – 15;
3. Acute calculous cholecystitis, choledocholithiasis – 4;
4. Syndrome of post-cholecystectomy, choledocholithiasis, stricture of the retroduodenal part of the choledochus – 6;
5. Chronic indurational pancreatitis, stricture of the retroduodenal part of the choledochus – 4;
6. Iatrogenic damage of the choledochus – 1;
7. Cancer of the pancreas head, mechanical jaundice – 2.

All the operations were carried out with endo-tracheal anaesthesia. In 10 cases the choledocho-duodenal anastomosis was drained from gallstone duct, in 4 cases the draining probe was carried out from the stomach wall to the skin. Such drains were used mainly with weak patients and in cases when the choledochus was inflamed. From post-operation complications insufficiency of the anastomosis and the suture should be noted in 1 case, after which a fistula was formed, which closed in 21 days. In case of such complication it is important to safely limit discharges from the anastomosis that is why we consider it necessary after any similar operation to close the right lateral channel, with fixing of the colon to the parietal peritoneum at the liver corner and draining of the under-liver space by two poly-ethylene tubes.

Apart from the mentioned complication, in post-operation period suppuration of the wound took place in three cases, post-operation pneumonia developed with two patients. There was no case of mortality. Distant results are being investigated.

In spite of the difficult contingent of the patients, both from the viewpoint of age and complexity of illness, we think that the method of the anastomosis' creation by Iurash-Vinogradov's method modernized by us is quite safe, which will enable us to considerably diminish mortality.

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Модификация метода холедохо-дуоденоанастомоза

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Р Е З Ю М Е

Среди хирургических способов лечения компрессии желчных протоков наиболее распространенным методом является холедохо-дуоденостомия. Об этом свидетельствует широкое применение в практике данного метода большинством хирургов. Вместе с тем, после холедохо-дуоденостомии нередко встречаются осложнения функционального характера. С целью уменьшения числа осложнений нами предложен модернизированный вариант одного из распространенных методов холедохо-дуоденоанастомоза по Юрашу-Виноградову. Предложенный вариант предусматривает соединение стенки двенадцатиперстной кишки с холедохом несквозными швами. Всего модернизированный метод применен в 41 случае. В послеоперационном периоде имели место 4 осложнения, не связанные с методом выполнения операции. В одном случае развилась несостоятельность швов анастомоза, которая закрылась после соответствующего лечения. Среди оперированных больных летальных исходов не отмечалось.

Ключевые слова: *хронический панкреатит, холедохо-дуоденостомия, холедохо-дуоденоанастомоз*