

Some Technical and Tactic Issues of Closing of Duodenum Stump in Case of Low and Penetrated Ulcers

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Abstract

Closure of duodenum stump in cases of low complicated ulcers is one of the hard stages of stomach resection according to Bylroth's II method. For closing the duodenal stump the author has technically improved and applied the approved methods of Judin, Masliak, Saposhkov and others in treatment of 70 patients having complicated low ulcers of the duodenum. After the operation one patient has developed insufficiency of the duodenal stump. The obtained data confirm that the well-grounded choice of optimal methods of duodenal stump closure can diminish to the minimum level of the suture insufficiency.

Keywords: *duodenum, penetrated ulcer, stump*

Closing of duodenum stump in case of low and penetrating ulcers is the most complicated stage of Billroth second method of gastric resection, therefore number of works of well known scientists are dedicated to this issue [2, 5, 6, 7, 8].

It should be noted that no method for stump treatment gives full guarantee of stump safety [4].

In cases of penetrating low ulcers, closing of the stump is associated with great difficulties, which are basically caused by deformation and damage of the duodenum wall, adjacent to the ulcer. In case of penetrating ulcers at the top of the pancreas, it is necessary to search for various possibilities to close the stump, what can be achieved through different technical and tactical approaches. In such circumstances it is significant to create the back wall on account of the side walls. For creation of the back wall we consider to be significant mobilization of the mucous tunics on the area of few millimeters, after what the first suture is attached so, that in addition to clinging with the serous muscular layers, it passes through muscular layer of the back wall, freed from the mucous layer. After tying up the suture, the extremely low weak section of the back wall shall be effectively fixed.

After making first suture, the next sutures provide reliable rehabilitation of the back wall. When the back wall is created on account of the sidewalls, through

proper technical approach, cylindrical or trapezoidal stump may be created. Some surgeons completely close the stump and gives to it conic form and afterwards, return the stump to the lamina by means of purse string suture (Krivosheev method) [2] and some of them close it by Joudin spiral method [8]. We often apply this method with our modification [1]. When large sections of the intestine walls are involved in the ulcer process and because of damage of the front wall there are poor reserves for mobilization, we found reasonable to apply modified method of Maslyiak [3] mucous tunic is layered off from the back wall so, that the layered mucous tunic can be connected with the front wall, without stretching. Their connection should be provided by non-through sutures. After closing of the stump the front wall is connected to the necked muscular layer of the back wall through the purse string second stage sutures. Strengthening of the stump is provided through connection of the front wall with the pancreas.

To our opinion one of the reliable methods for closing penetrating ulcers at the top of the pancreas is Rusanov's method [6], which regards resection of the segment of mucous tunics from the back wall and connection of its edge to the front wall. In the case of applying of this method our surgical tactics is different and we provide connection of the front wall with the back wall by means of non-through sutures. Here we should note that this method is more effective for the small ulcers. In case of large and deep penetrating ulcers first suture is attached through above technique.

Sequence and technique of attaching of the following sutures is different. In such cases we use the lower edge of the ulcer, on which we attach front wall serous muscular layer with nodal sutures. The edges of the ulcer are connected with the front wall through the third stage sutures. By means of this technique of attaching the sutures we are able to provide tamping of the ulcer through the wall against it and at the same time remove the loading on the first and second stage sutures.

At the time of freeing of penetrating ulcers at the top of pancreas we pay great attention to surgical diagnostics, as working in vicinity of ductus pancreaticus and ductus pancreaticus accessories is associated with great difficulties and therefore, if there is any risk of their damage it should be better to decline radical operation.

It is similarly difficult to free out low and penetrating ulcers located in the side walls and to close the stump. At the time of freeing of penetrating ulcers in hepato-duodenum yogi, damage of ductus cysticys and large main vessels is not excluded. Therefore, if it is possible to maintain the wall against the ulcer, we refuse to mobilize the wall adjacent to the ulcer, provide dismucosation of the intestine wall beneath the ulcer and close the stump by means of Sapashkov "Shred" method [6], with single difference: we connect to the wall against the ulcer not the edge of the ulcer, but dismucosed wall beneath the ulcer. Among measures, against stump deficiency we regard as a primary one, perfection of surgical techniques, what can provide maintaining of duodenum stump maximal feeding even in the most complicated cases. At the time of mobilization of the duodenum, it is necessary to maintain the main vessels from the both sides. If it is necessary to block the vessel on one side, the vessel on another side shall be inevitably maintained.

On the basis of all above mentioned, in the case of low and penetrating ulcers, to close the duodenum stump, following surgical principles shall be followed:

1. Incidence of segments of mucous tunic in the wound shall be excluded
2. Infected space between the sutures shall be reduced to the minimum or excluded
3. Connecting wall layers shall be similar or with little histological and morphological differences
4. Feeding of the duodenum stump shall be improved through maintaining of the main vessels.

Above tactical approach was applied in 70 surgical operations by Billroth second method for the patients with diagnosis of low and penetrating ulcer. Among them 30 patients were with bleeding complications, 40 patients suffered with super compensated and compensated stenosis, penetration at the top of the pancreas was noted in 40 cases and hepato-duodenic yogi - in 20 cases, in mesocolon in 8 cases and in cholecyst - in 2 cases. In number of cases there were combinations of these complications. Following methods of stump treatment were used: Method of Joudin with our modifications - in 30 cases, methods of Rusanov and Maslyak - in 5 cases, each, Sapashkov "shred" method - in 10 cases and in 10 cases the stump was treated by means of non-typical method. The stump of one patient has opened. He has passed away.

According to the available data, the results are better than average statistical indicators, what allows us to state that in cases of low and penetrating ulcers closing of the stump is available as through optimal selection of existing methods, also through their technical perfection.

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Некоторые тактические технические вопросы закрытия культи двенадцатиперстной кишки при низких осложненных язвах

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Закрытие культи двенадцатиперстной кишки при низких осложненных язвах является трудным этапом резекции желудка по методу Бильрот II. Для закрытия культи двенадцатиперстной кишки технически усовершенствованы и применены апробированные методы Юдина, Масляка, Русанова, Сапошкова и др. При лечении 70 больных с низкими осложненными язвами двенадцатиперстной кишки, после операции лишь у одного больного развилась несостоятельность культи двенадцатиперстной кишки. Полученные данные подтверждают, что с помощью обоснованного выбора оптимальных методов закрытия культи двенадцатиперстной кишки возможно снижение до минимума случаев несостоятельности швов.

Ключевые слова: двенадцатиперстная кишка, осложненные язвы, закрытие культи