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DIAPEUTIC METHOD OF TREATMENT OF VARICOCELE

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Nurmurzaev Zafar Narbay Ugli
Dusmuradova Dildora Khushmuradovna
Samarkand State Medical University, Republic of Uzbekistan, Samarkand;

ABSTRACT

The study included the results of treatment of 188 patients with left-sided varicocele admitted to the surgical department of the Tashkent City Clinical Hospital No. 1 named after. Ibn Sino. Depending on the method of surgical intervention, 2 groups of patients were divided. In 2016-2018 91 (48.4%) patients underwent conventional surgical interventions (Ivanissevich or Palomo operations), which formed the comparison group. From 2019 to 2022 97 (51.6%) patients underwent subinguinal selective operations (antegrade endovascular sclerotherapy of the left-sided testicular vein and Marmara operation), which were included in the main group. The developed method of surgical treatment of varicocele - antegrade endovascular sclerotherapy of the left testicular vein - is cost-effective (medical costs are 50.8% less than using the Ivanissevich operation and 50.0% less than using the Palomo operation), reduces the length of stay of patients in hospital from 7.2±0.9 to 2.1±0.4 ($p<0.001$).

Key words

varicocele, diagnosis, treatment, Ivanissevich operation, Palomo operation, Marmar operation, antegrade endovascular sclerotherapy, complication.

Currently, treatment and diagnostic tactics for varicocele is one of the most urgent and still unresolved problems of modern healthcare. In this regard, there is a need to review the criteria for radical surgical intervention in varicocele, depending on the informative value of non-invasive medical imaging methods that allow us to assess the features of hemodynamic types of pathological venous reflux at the preoperative stage and identify signs of disease aggression. Therefore, optimization of the diagnostic algorithm for choosing the most radical surgical treatment tactics in each specific case becomes especially relevant. in this case.

To choose surgical treatment of varicocele, an individual differentiated approach is necessary for each patient with different types of pathological reflux of this pathology.

Thus, the decision on the choice of the optimal method of surgical intervention and the method of its implementation remain relevant.

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The aim of the study was to study the clinical and cost-effectiveness of surgical treatment of patients with varicocele.

Materials and methods of research. The study is based on the results of treatment of 188 patients with left-sided varicocele who were admitted to the surgical department of Tashkent City Clinical Hospital No. 1. Ibn Sino.

Depending on the method of surgical intervention, 2 groups of patients were identified. In16-2018 20-16-218 years, 91 (48.44%) patients underwent standard surgical interventions (Ivanisevich or Polomo operations), which made up the comparison group.

From9 по 2022 гг. 2019-2022, 97 (51.66%) patients underwent subinguinal selective surgeries (antegrade endovascular sclerotherapy LV and Marmara surgery), which were included in the main group.

The patients ranged in age from1-5 to 24 years. The mean age of the patients was1,7,5±2,3 years.

To compare the results of surgical treatment in the study groups, all medical expenses were calculated, such as: the cost of laboratory tests; the cost of radiation and functional diagnostics; hospital stay (bed-day); the cost of medicines; providing anesthesia; operating expenses; the cost of medicines and treatment of complications in the postoperative period.

The expansion of indications for endovascular sclerotherapy with LTV and microsurgical operations did not negatively affect the duration of surgical intervention. On the contrary, this indicator has decreased. The duration of inpatient treatment after surgery was reduced 4 – fold compared to the comparison group-from 7.2±0.6 to 1.9±0.3 days.

Perioperative results of surgical treatment of varicocele include all indicators that were obtained during the operation and in the early postoperative period (Table 1).

The time of surgical intervention was calculated from the beginning of the incision on the skin to the end of suturing the wound. Moreover, the preparation time for surgery related to anaesthetic procedures is not included during the operation. In our observations, there were no cases of significant bleeding during surgery, so the exact amount of blood loss was not taken into account. The need to prescribe various types of analgesics arose on the 1st day after Ivanissevich and Palomo surgery in 68 patients (37.6%). Of these, 24 patients (13.2% of the total number of patients in the comparison group) required a single injection of a narcotic analgesic (1 ml of a 5% tramadol solution) due to severe pain. The remaining 44 patients (24.3%) received ketonal or baralgin in most cases, and only 3 (1.6%) patients had to be given them 2-3 times. On the 2nd and subsequent days after surgery, 4 (2.2%) patients in the comparison group needed analgesics.

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Table 1.

Postoperativeresults of varicocele treatment in the study groups

Indicator		Study groups				P
		Comparison		group Main group		
		Ivanisse vich's Operation	Ivanis sevich operation Palomo	oper ation NPP LTV	Oper ation Marmara	
Operation duration, min: median (minimum-maximum)		78 (45-120)	86 (50-130)	48 (40-60)		< 0,05
Volume of intraoperative blood loss, ml:		< 40	< 50	< 15	< 30	-
Need for analgesics:	- narcotic analgesics,%	12.6	14.1	1.5	1.5	< 0.05
	- non-narcotic analgesics,%	23.3	25.6	9.3	16.7	< 0.05
	-did not need,%	64.1	60.2	89.1	81.8	< 0.05
Total duration of inpatient treatment, day: median (minimum-maximum)		3 (2-6)	5 (4-8)	1 (0-2)	2 (1-3)	< 0,05
Duration of postoperative hospital stay, day: median (minimum-maximum)		3 (1-5)	5 (4-7)	1 (0-1)	1 (1-2)	< 0,05
Frequency of all complications, %		13.6	11.5	0.8	3.0	< 0.05

After performing AES LTV and microsurgical subinguinal correction of the Marmar varicocele, indications for the appointment of painkillers on day 1 were established in 26 patients (13.3%). From this category, only 3 patients (1.5% of all patients in the main group) had one injection of a narcotic analgesic (1 ml of a 5% tramadol solution) due to severe pain. In the remaining 23 patients (11.8%), they were limited to one injection of ketonal or baralgin. Patients of the main group did not need to be prescribed analgesics on the 2nd and subsequent days. Despite the fact that the price of 1 ampoule of a sclerosing drug (ethoxysclerol 30 mg / ml) is 95 thousand soums, the use of NPP LTV not only reduced the number of painkillers used, but also reduced the duration of hospital stay and postoperative recovery. In

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patients who reduce the frequency of postoperative complications of various types, which indicates the cost-effectiveness of this method. The obtained data indicate the advantage of AES LTV over conventional conventional methods in many important aspects, and, first of all, in terms of the main indicator - the frequency of postoperative complications of the disease, since the goal of surgical treatment is to rid the patient of varicocele and its complications. The advantages of varicocelectomy using endosclerotherapy were confirmed by statistical calculations.

All medical expenses incurred directly during the preparation and implementation of surgical treatment of varicocele are included in table 2.

Table 2.

Direct costs of performing varicocelectomies in various ways

Type of direct expenses	Study groups				P
	Comparison		group Main group		
	Ivanissevich's Operation	Ivanissevich operation Palomo	operation NPP LTV	Marmara operation	
	Expenses per patient, sum				
Laboratory tests	64567.72	64567.72	64567.72	64567.72	> 0.05
Radiation and functional research methods	87734.32	87734.32	87734.32	87734.32	> 0.05
Drug costs	112043.84	119078.93	116834.57	36728.15	< 0.05
Provision of anesthesia	69860,54	72573,39	9356,21	42495,73	< 0.05
Operating expenses	93439.31	93439.31	13937.59	73729.61	< 0.05
Postoperative medical expenses	16723,80	16723,80	16723.80	16723.80	2329.63 6438.87> 0.05
Hospital stay (bed-day)	189000	189000	27000	81000	< 0.05
Total	633369.53	643117.47	321760.04	392694.40	< 0.05

Finally, the total cost of treating one patient with varicocele using NPP LTV was 321760.04 soums, when choosing Marmara surgery 392694.40 soums, and when using conventional traditional methods such as Ivanissevich and Palomo surgery 633369.53 and 643117.47 soums, respectively.

Thus, medical expenses in the case of LTV NPP were 50.8% less than in the case of Ivanissevich operation and 50.0% less than in the case of Palomo operation.

The treatment efficiency coefficient was determined by the ratio of the sum of all costs. As a result of the calculations, it was found that the effectiveness of endovascular sclerotherapy of the left testicular vein significantly exceeds the operations of Ivanissevich and Palomo. The efficiency coefficient of treatment of patients with varicocele during AES LTV was 643520.08 soums (636578.43 soums /

0.9438), and during Ivanissevich and Palomo operations-1286234.94 soums (1325754.53 soums / 0.953). Thus, the difference in the treatment efficiency coefficient is 50.0% ($p < 0.05$). This means that to achieve the main result of the operation for the treatment of varicocele with endovascular sclerotherapy, financial resources are spent 50.0% less than with traditional methods.

Several studies have been conducted to determine the economic estimates of the results of varicocele treatment using these methods. Most of these studies have shown that endovascular sclerotherapy of the left testicular vein is a more cost-effective treatment option. The results of our work have confirmed the high economic efficiency of the LTV NPP. The possibility of such an intervention in most cases under local anesthesia, the absence of the need for expensive equipment, minimal morbidity after surgery with a low cost of analgesics, and hospital stay as a result of this are factors that contribute to reducing the cost of endovascular sclerotherapy. left testicular vein. Along with the best clinical results, low financial costs make endovascular sclerotherapy of the left testicular vein the most effective among all methods of treating varicocele, which gives many experts the right to consider this method the "gold standard" in the treatment of varicocele.

Conclusions: A comparative analysis of the results of various methods of surgical treatment of varicocele indicates that when choosing an operation, it is necessary to take into account the hemodynamic type of reflux.

The developed method of surgical treatment of varicocele-LTV-is cost-effective (medical expenses are 50.8% less than when using the Ivanissevich operation and 50.0% less than when using the Palomo operation), reduces the length of hospital stay of patients from 7.2±0.9 to 2.1±0.4 ($p<0.001$).

The developed algorithm for choosing the tactics of surgical treatment of varicocele, taking into account the hemodynamic type of reflux, as well as an innovative method of surgery, improved the quality of care provided by reducing the frequency of immediate postoperative complications from 13.6% to 0.8% and relapse of the disease from 17.1% to 1.5%.

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