

Surgical Outcomes of Inguinal and Suprainguinal Varicocelelectomy

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ABSTRACT

Aim: To see the surgical outcomes of inguinal and suprainguinal varicocelelectomy.

Study Design: Comparative study

Place and Duration: Department of Urology Khairpur Medical College (KMC) Khairpur Mir's Sindh from 1st January 2016 to 31st December 2017.

Methods: Thirty patients with left varicoceles were divided in two methods, 15 patients treated with inguinal and 15 patients treated with suprainguinal methods. These two methods have been measured in terms of surgical parameters and complications such as chronic pain, hematoma, hydrocele, wound infection, recurrence, semen improvement and testicular artery damage.

Results: The varicocelelectomy for the suprainguinal method was slightly shorter than inguinal (20 vs. 40 min). Seventy percent of postoperatively improved semen has been found in both varicocelelectomy methods, whereas two with persistent SS and one recurrent SSC after inguinal care have been reported.

Conclusion: There is small difference in the success rate of the inguinal and suprainguinal methods. The suprainguinal method, however, is simpler and quicker.

Keywords: Outcome, Obstructive urethral stone, Management

INTRODUCTION

A varicocele is defined as an abnormal dilation of the internal testicular vein and the venous plexus of the pampiniform plexus within the spermatic cord.¹ This plexus moves with the epididymis and the vas deferens around the back section of the testis to dry up the sperm cord. The vein network unites in the gonadal or testicular vein.²

The right gonadal vein drains into the lower vena cava, while the left gonadal vein drains the higher angle into the lower vena cava, and then drains the lower vein cava into the lower vein.³ Small one-way valves that avoid backflow are used to regulate the upward flow of blood in the veins. Defective valves or vein compression by an adjacent structure may cause the testis to dilate the testicular veins, causing varicocele to occur⁴. One of the plexus' key duties is to decrease the testis temperature. The most common complication of untreated varicocele is the higher testis temperature, contributing to testicular atrophy, which causes infertility. Not most varicoceles are asymptomatic in the tiny pampiniform vessels.⁵ However, they can cause scrotal pain and discomfort. This pain is normally mild to moderate, occurs with long sitting, standing or movement periods and is alleviated by lying. Varicocele pain is generally mild and does not normally apply to anything else.⁶ It is not related to erectile dysfunction, but to male infertility, asthenospermia is associated. Varicocele can make the scrotum feel like a clumpy "worm sac." However varicocele prevalence in the population is approximately 10%, of which 20% were in the subfertility clinic.⁷ The left side of varicocele and the right side are uncommon although bilateral varicocele is usual

for 15 percent. Diameter is usually between 0.5 and 1.5 mm. Varicocele is called varicose vein dilatation of more than 2 mm.

The general cause of left varicocele is that Lt testicular vena drain into the left renal vena has its right angle, whereas right vena cava drain is not at its right angle, but oblique.⁸ Following varicocelelectomy, semen examination increase 70% and pain-free 90% and pregnancy chances of 40 percent within 2 years⁹. Varicocele procedures such as surgical, laparoscopic and radiographic rely on the experts and the capacity to have different results. There are numerous approaches. Varicocele under 37 years of age surgical procedure leads to a better sperm motility result than patients under 37 years of age^{10,11}.

MATERIALS AND METHODS

This comparative analysis took place from 1st January 2016 to 31st December 2017 at the Khairpur Medical College (KMC). Randomly, inguinal varicoceles (n=15) and suprainguinal (n=15) procedures have been performed in 30 patients with left varicoceles. Scrotum, oligospermia and scrotal pain like a bag of worms for both patients. The clinical history, diligent clinical monitoring, and scrotum Doppler Ultrasound (USG) were both confirmed by all patients. The inner sperm vein is inguinally connected and the supporting artery carefully protected, while secondary cremasteric dilation and varicose vein is also connected in advance. Testicular veins joining just above the inner ring and retaining the vas deference and testicular artery are approached with the suprainguinal. Both strategies have been contrasted with the parameter of operating time and complications such as continuous scrotal pain, hematoma, hydrocele, wound infection, semen recurrence improvement and artery damage. Via SPSS-20, the data were entered and analysed.

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RESULTS

The age between 22 to 40 years and mean age was 0.25 ± 5.19 years. Patients with varicocele, BMI average was 23.44 ± 1.28 kg/m². Twenty two (73.33%) patients were varicocele grade 2, while grade 3 (Table 1) was varicocele grade 8 (26.67%).

The varicocelectomy for the super-inguinal approach was slightly shorter than for the inguinal (20 versus 40 min) approach with a p-value less than 0.05. Semen changes were observed in 11 (73.33%) patients in the suprainguinal group and 10 (66.67%) in the inguinal group (p-value > 0.05). Hydrocele was presented in 1 (6.67%) patient in suprainguinal and 2 (13.33%) in the inguinal approach, in 2 (13.33%) in suprainguinal patient and in 3 (13.33%) in inguinal approach. 2 (13.33%) with chronic scrotal pain and 1 (6.67%) recurrent varicocele following inguinal treatment were observed (Table 2). In an inguinal method with a P value 0.02 success rate of suprainguinal varicocelectomy was 100% and 93.4% (Table 3).

Table 1: Baseline details of all the varicocele patients

Variables	No.	%
Mean age (year)		30.25±5.19
Mean BMI kg/m		23.44±1.28
Severity		
Grade 2	22	73.33
Grade 3	8	26.67

Table 2: Comparison of surgical outcomes between both procedures

Variables	Suprainguinal	Inguinal	P-value
Operative time (min)	20	40	0.036
Semen Improvement	11 (73.33)	10 (66.67)	N/S
Hydrocele	1 (6.67)	2 (13.33)	N/S
Wound Infection	2 (13.33)	2 (13.33)	N/S
Scrotal Pain	0	2 (13.33)	N/S
Recurrent	0	1 (6.67)	N/S

Table 3: Comparison of treatment success rate

Success rate	Suprainguinal	Inguinal	P-value
Yes	15 (100%)	14 (93.4%)	0.02
No	-	1 (6.6%)	

DISCUSSION

The duration of varicocelectomy for the suprainguinal method was slightly shorter than that of the subinguinal (20 versus 40 min). In both procedures, 70% after surgery improvement of semen is found to be similar to Kimura et al¹² and Shiarshiet al¹³ and Chiba et al¹⁰ patients, whereas two patients with chronic scrotal pain, similar with Ebiloglu and al¹¹ and one recurrent varicocele following subinguinal procedures. In the present research, the success rate of suprainguinal varicocelectomy in subinguinal methods was marginal (P>0.05) at 100% and 93.4%.

The aim of treatment with varicocele is to avoid blood flow from the back wall to the scrotum and to cool off the testes. To do so, veins from the testes to the body are packed or blocked as completely as possible. The regulatory gene with a difference in transcription of the cycle of cells in the testis are critical for the maturation of sperm and fertility arrest. Later maturation arrears provide a substantial improvement in examination of semen and

fertility after Varicocelectomy.¹³ A single vein is left open (vassal Venus), or the collateral circulation allows the blood to exit the testicles after the procedure¹¹. Over ground operation (subinguinal), groyne (inguinal) or superinguinal (retroperitoneal) approaches shall be used. Laparoscopy and an interventional radiologist can also conduct the treatment via a method known as venography and immobilization. In our study, all patients with scrotum pain were 10 percent predicted with infertility and oligosperm and 8% with scrotum, as with worms, while all patients were clearly diagnosed with details of their medical history, detailed clinical evaluation and Doppler scrotum ultrasound¹²

CONCLUSION

The inguinal approaches and the suprainguinal approaches have a marginal success gap and a statistically insignificant complication risk. However it is easier to carry out the suprainguinal method, as it involves lower divisions of the veins and is associated with a greater diameter of the testis artery.

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