ORIGINAL ARTICLE

COMPLICATIONS ASSOCIATED WITH IVANISSEVICH PROCEDURE FOR VARICOCELE TREATMENT

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ABSTRACT

Background: Ivanissevich procedure is commonly practiced in district hospitals for the management of varicocele. However, the complications associated with this procedure are considered to be higher as compared to other procedures such as Paloma and laproscopy. The aim of this study was to find out the frequency of complications associated with Ivanissevich procedure for varicocele treatment.

Material & Methods: This descriptive study was performed at Department of Surgery, DHQ Hospital, Kohat, from June 2011 to June 2013. Total 125 patients were studied. All these patients were having grade II varicocele. Complications were observed over the follow-up period of 6 months.

Results: The age range of patients was 15 to 42 years with mean of 26.9 years. Ninety percent of these patients had grade II left sided varicocele. Regarding complications 5(4%) patients had postoperative hematoma /hydrocele formation, 12(10%) had scrotal edema that settled within a week, 20(16%) patients had recurrence and 2(1.6%) patients had testicular atrophy.

Conclusion: Ivanissevich procedure has a high complication rate and alternate procedures with low complication rates like Paloma and laprorscopic varicocelectomy should be considered as the treatment options.

KEY WORDS: Varicocele; Complications; Testis; Hematoma; Scrotal hydrocele; Atrophy.

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INTRODUCTION

Varicocele is found approximately in 10-15% of the population and its incidence is higher in infertile population (30-45%). 95% of the varicoceles are on the left side and the difference in venous drainage of the two sides accounts for this left-sided dominence.[1] It is mostly idiopathic however it can occur secondary to renal cell carcinoma when it invades renal vein.[2,3] Varicocele is also regarded as one of the surgically treatable causes of male infertility.

The basic principle in its management is cutting the venous continuity of the spermatic vessels. This is done surgically by following different approaches such as Low ligation i.e. Ivanissevich procedure, high ligation (Paloma procedure) and laproscopic varicocelectomy.[2] Low ligation (Ivanissevich) entails 2-3 cm inguinal crease incision followed by dissection of the engorged vessels and ligation with suture followed by transection of these vessels.[4,5] High Ligation (Paloma) on other hand comprises retroperitoneal ligation of the testicular veins. Incision is 2-3 cm in length lateral to or below the umbilicus 2-3 cm laterally. Also laparoscopic retroperitoneal approach is used. Nowadays embolisation of the diseased vessels is also on the cards.[6,7]

The aim of this study was to find out the frequency of complications associated with Ivanissevich procedure.

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MATERIAL AND METHODS

A total of 125 patients were selected for the study which was conducted in the Surgical Department of Divisional Headquarters Hospital KDA Kohat from June 2011 to June 2013.

The patients were admitted from out Patient department of the hospital and all the baseline investigations were performed in the hospital. In order to rule out other pathologies like carcinoma kidneys, ultrasonography of the abdomen, pelvis and scrotum were included in the screening. All the patients selected were having grade II varicocele and operation was performed by consultant in charge to eliminate operative bias. Complications in patients were observed over the follow-up period of 6 months. All the patients were followed fortnightly for one month and

then monthly for 6 months. Results were analyzed using SPSS version 17.

RESULTS

A total of 125 patients were studied. Age range of patients was 15 to 42 years with mean age of 26.9 years. Majority of patients were in the 3rd decade of life i.e. 52.7% (66 patients) while 29.16% (36 patients) and 19.77% (23 patients) were in 4th and 2nd decades respectively. (Table 1)

Out of 125 patients 104 (83.2%) had grade II left-sided varicocele while 18 (14.4%) patients had bilateral grade II varicocele and 3 (2.4%) had right-sided varicocele.

Postoperative complications were noted and it was found that 5 (4%) patients had postoperative hematoma /hydrocele formation, 12 (10%) patients had scrotal edema that settled within one week, 20 (16%) patients had recurrence in the form of persistent dilated veins and hanging down testes and 2 (1.6%) patients had testicular atrophy. (Table 2)

Table 1: Age distribution of study patients (n=125).

Age (in years)	Number	Percentage
11-20	23	19.77%
21-30	36	52.7%
31-40	66	29.16%

Table 2: Post-operative complications after varicocele surgery by Ivanissevich procedure.

Complications	Frequency	Percentage
Hematoma /Hydrocele	5	4%
Recurrence	20	16%
Edema	12	10%
Testicular Atrophy	2	1.6%

DISCUSSION

Varicocele is found in 10% of individuals most commonly in younger age groups. Most commonly left side is affected. Our results are consistent with others studies regarding the side of occurrence of varicocele. Reported incidence of left-sided varicocele is 85.6%, 0.4% right sided and 14% bilateral.[6]

Varicocele presents at early adolescence, rarely detected individuals are younger than 10 years. In our study mean age was 26.6 years. Most of the patients were in 3rd decade of life (52.77%) whereas remaining were distributed in 4th and 2nd decade of life as 29.16% and 16.66% respectively. The late reporting was related to ignorance and lack of regular medical services.[7]

The etiology of varicocele is not known. The venous dilatation is due is to absent valves, increase in venous pressure in long spermatic vessels draining at right angle into the renal vein, compression of the left renal vein, increased pressure in the iliac vein transmitted to the pampiniform plexus through ductus deferens vein which drains into internal iliac vein. Appearance of varicocele in middle aged men should raise the suspicion of renal cell carcinoma.[8] Depending on the size, varicocele is divided into three grades; being palpable with valsalva manoeuvre (grade I), palpable without valsalva manoeuvre (grade II) and visible (grade III). The diagnosis of varicocele is mainly clinical.[9] In subclinical cases doppler ultrasonography, contact scrotal thermography, blood pooling radioisotope angiography and spermatic venography may be helpful. An ultrasound of testis helps to assess the size of testes.

The indication of surgery in cases of varicocelectomy is mere its presence. Macleod reported that 90% of the patients have decreased sperm motility and 65% has decreased sperm count. Main indications for surgery are bilateral palpable or symptomatic varicoceles, abnormal sperm counts, smaller testes on affected side and cosmoses.

There are a number of surgical procedures available for treatment of varicocele.[10,11] These are low ligation (Ivanessivich), high ligation (Paloma), laparoscopic and transcutaneous balloon embolization. Each procedure has its merits and demerits. Principle however is same for all i.e. interruption in ectatic vein that make up varicocele with preservation of testicular artery preventing testicular atrophy.[12,13] Hence the preferable surgical approach should be the one that is easy to perform and has less complications. Out of all the above stated procedures Paloma procedure and laproscopic varicocelectomy is nowadays recommended. Owing to their easy procedure and minimum complications.[15-17]

In our study, the mean age of the patients was 26.6 years. Other studies also showed that the disease was most prevalent in third decade of life (52.7%).[15]

It was also found that complications with low ligation (Ivanessivich) were high. This was evident in other studies namely Bechara et al and Shamsa et al.[8,9] Recurrence rate in other studies was 16% and 11%.[14,15] Similar results (16%) were obtained in our research.

Postoperative hydrocele is a major problem after most inguinal procedures and same were in our study (3%).[16,17] This was also supported by the aforementioned studies. Hence our results were comparable to available international data.

CONCLUSION

It was concluded that low ligation (Ivanessivich) is the procedure associated with high rate of complications. Hence other procedures like high ligation (Paloma) and laproscopic varicocelectomy should be considered as the treatment options.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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