

Ambulatory treatment of varicocele

M. Campagnol *, M. Di Giacomo, M.M.O.E. Morelli, P. Proietti, S. Pierdominici,
A. Cristaldi, A. Cavallaro

Istituto di Clinica Chirurgica Generale and Istituto di Anestesia e Rianimazione, Università degli Studi di Roma 'La Sapienza', Rome, Italy

Abstract

The authors describe their experience in the ambulatory treatment of varicocele. Forty-four patients were treated through an infrapubic approach and only one recurrence was observed. The authors conclude that ambulatory treatment of varicocele is safe, easy to perform and the patient can resume his daily activity within 48–72 h. © 1997 Elsevier Science Ireland Ltd.

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1. Introduction

Varicocele is a reflux syndrome with varicose dilatation of the testicular veins. It occurs in 8–23% [1] of the adult male population and usually affects the left side. Patients suffer from scrotal discomfort and often show sub-fertility with changes in the sperm count. Treatment is always advisable since improvement in the sperm count, besides disappearance of discomfort, is usually obtained.

Surgery can easily be performed as a day surgery case under local anesthetic, allowing the patient to return to normal life within 48–72 h. We report our experience with 44 patients treated as outpatients at our institution.

2. Anatomy

The testicular veins drain the testis and the epididymis. The first tract of the veins is called the pampiniform plexus. This plexus forms a counter-current heat-exchange mechanism which lowers the blood temperature in the testicular artery. Just below the external inguinal ring, the plexus coalesces into three or

four veins which traverse the inguinal canal before uniting into two spermatic veins running on either side of the artery. These veins contain valves. The left spermatic vein enters the left renal vein at a right angle whereas the right spermatic vein enters the inferior vena cava at an acute angle.

Several connections are described between the spermatic veins and:

1. the sapheno-femoral junction
2. the contralateral spermatic veins via suprapubic connections
3. the lumbar veins
4. the inferior vena cava
5. the perineal veins.

However, the pathophysiological classification of varicocele is based on reflux pathways [2]: type 1, reflux in the internal spermatic vein (high nutcracker); type 2, reflux in the external spermatic veins which enter the external iliac vein (low nutcracker); and type 3, reflux in both the above mentioned venous systems.

3. Materials and methods

From August 1987 to April 1996, 44 patients were treated as day cases for varicocele; 8.2% of all the ambulatory surgery performed (Table 1). One patient had bilateral disease and one was recurrent. The latter

* Corresponding author. Via Valpassaria 4, 00141 Rome, Italy.
Tel.: +39 6 87188325.

Table 1
Ambulatory surgery, July 1986–April 1996

	No.	%
Varicose veins	263	47.6
Pilonidal sinus	89	16.1
Varicocele	45	8.2
Carpal tunnel	34	6.2
Miscellaneous	121	21.9
Total	552	100

was related to previous high ligation performed elsewhere. The mean age was 24 years (range 13–61).

All the patients were studied preoperatively by means of one or more tests, such as Doppler, duplex-scan or color Doppler. All the patients had confirmed reflux in the spermatic vein and the pampiniform plexus. Almost half of the patients also had an impaired sperm count. The operation was performed on a day basis under local anesthesia (mepivacaine 1 and 2%, 5–10 ml.). The skin was incised at the external inguinal ring (infrapubic access) and the spermatic cord mobilized.

After the cremaster and the spermatic fascia were opened in the line of the cord and the structures identified and preserved, the dilated veins were individually ligated and divided. The skin was then sutured and dressed in the usual fashion and a firm scrotal support applied. The patient was put on antibiotics and discharged immediately.

Postoperative pain was slight or absent. The patients were seen on the 3rd, 7th and 30th postoperative days. Wound hematoma in one patient, which did not require exploration, was the only complication seen in this period. Follow-up showed only one recurrence. A 27-year-old patient, 18 months after surgery, had reflux in the pampiniform plexus related to a suprapubic vein fed by a contralateral varicocele.

4. Discussion

The treatment of varicocele in the past has shown a high recurrence rate. This was related to the poor preoperative diagnosis which was based only on clinical evaluation. In recent years, a noteworthy improvement in the diagnosis has been obtained by relating anatomy and pathophysiological pathways of reflux in the spermatic veins and the pampiniform plexus. The classification by Coolsaet [2] into three types seems to be the

most suitable since it includes all the significant routes of reflux. The improvements relate to retrograde selective testicular venography, which is the gold standard amongst the diagnostic tools. Moreover, it allows non-surgical treatment of varicocele by means of coils [3], balloons and sclerosing drug insertion [4], which has given good results in experienced hands. A venogram should be performed in all patients, but it requires qualified structures, is invasive and sometimes has complications. Hence, when venography is not feasible, the treatment should aim to eliminate all the incompetent veins despite their routes and before their anastomoses.

The retroperitoneal ligation of the spermatic vein (Ivanishevich, Palomo, Laparoscopic ligature) [5–7] is always best done after venogram and is not suitable for the types 2 and 3 reflux; otherwise recurrence is frequent.

The inguinal or subinguinal approaches [3] to the testicular veins make the division of the dilated veins possible in the lowest part so that unusual routes of reflux are eliminated as well as the classified ones. Furthermore, these approaches can be undertaken on a day basis using local anesthesia and the patient can be discharged immediately, pain free. He can return to normal activities within 48–72 h.

Between the inguinal and subinguinal approach, we prefer the latter in the infrapubic site since, compared with the others, it is associated with a lower incidence of postoperative complications such as hematoma or hydrocele and is less painful.

References

- [1] Steeno O, Knops J, Declerck L, Adernoelia A, Van De Voorde M. Prevention of fertility disorders by detection and treatment of varicocele at school and college age. *Andrologia* 1971; 8:47–53.
- [2] Coolsaet BL. The varicocele syndrome: venography determining the optimal level for surgical management. *J Urol* 1980; 124:833–840.
- [3] Raeli MG, Fucci CA. Chirurgia ambulatoriale del varicocele. *Giorn Chir* 1992; 13:263–264.
- [4] Massi M, Buongarzone D, Climinti DA, Appignanesi P. La terapia radiochirurgica del varicocele essenziale. *Flebologia* 1992; 3:189–192.
- [5] Ivanishevich O. Left varicocele due to reflux; experience with 4470 cases in 42 years. *J Int Coll Surg* 1960; 34:742–755.
- [6] Darzi A, Carey P, Menzies-Gow N, Monson JRT. Laparoscopic varicocelectomy. *Surg Laparosc Endosc* 1994; 4:210–212.
- [7] Dahlstrand C, Thune A, Hedelin H, Grenabo L, Pettersson S. Laparoscopy ligature of the spermatic veins. A comparison between outpatient and hospitalised treatment. *Scand J Urol Nephrol* 1994; 28:159–162.