

A COMPARISON BETWEEN LAPAROSCOPIC VARICOCELECTOMY AND THE OPEN METHOD. OUR EXPERIENCE AT THE HOSPITALS OF THE ROYAL MEDICAL SERVICES

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ABSTRACT

Objective: To report our experience in laparoscopic varicocelectomy in the treatment of varicocele in adults and to compare the results with those treated by the open method.

Methods: During the period from January 1998 till January 2001 two groups of adult patients with varicocele were simultaneously operated on at the hospitals of the Royal Medical Services, group I by laparoscopy and group II by open method. Each group included 100 patients.

Results: There was no significant difference regarding the operative time between the two groups. However, group I patients had significantly less consumption of pethidine equivalent for postoperative pain control, they were mobilized earlier, had a shorter hospital stay, and a faster return to normal activities and less complication rates. None of this group needed conversion to the open method.

Conclusion: Laparoscopic varicocelectomy has results similar to those of the open method. However, its postoperative advantages compared to the open approach are obvious.

Key words: Laparoscopic varicocelectomy, Open method, Varicocele.

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Introduction

Varicocele is the most common cause of male infertility occurring in about 15% of the general male population ⁽¹⁾ and in up to 40% of cases evaluated at sub fertility levels ⁽²⁾.

Following the laparoscopic revolution, laparoscopic varicocelectomy has become one of the commonest laparoscopic operations ⁽³⁾. Though it is new, yet it has become an accepted method of treatment for this common condition.

Generally laparoscopic varicocelectomy is believed to offer certain benefits for patients compared to the open operative method.

Methods

During the period from January 1998 till January 2001, one hundred patients (group I) underwent laparoscopic varicocelectomy at the hospitals of The Royal Medical Services. During the same period another 100 patients (group II) were operated upon by the open method at the same hospitals.

Their ages ranged between 20-50 years. A diagnosis of Varicocele was based on physical examination and on Doppler ultrasound. All of our patients presented for the first time and none of them was operated upon at the area of the lower abdomen.

All laparoscopic varicocelectomies (group I) were

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performed under general anesthesia; the patients were prepared as for any other surgical procedure. The majority (more than 90%) were operated on as outpatients, and were sent home on the same day of operation.

Open varicocelectomy was performed extra-peritoneally through a short transverse incision. Preoperative preparation was comparable to the patients in the laparoscopy group. T – test and Fisher’s exact test were used to determine statistical significant difference between the two variables at the level of significance (0.05).

The Surgical Technique

The patient is put in a supine position on the operating table. The surgeon usually stands on the right side while the assistant stands on the left and the T.V monitors are placed opposite to the surgeon.

A transperitoneal approach was used in group I patients and catheterization of the bladder was not needed.

Only three trocars were used in the procedure. Through a 10 mm transverse subumbilical incision a Verass needle was inserted to establish the pneumoperitoneum using carbon dioxide, with an initial intra-abdominal pressure of 12-15mmHg. A 10mm trocar was placed after removal of the Verass needle.

The endoscopic camera was introduced, and after inspection of the abdominal cavity two other trocars were inserted under direct vision, one 5mm trocar was placed just at the left McBurney’s point while the other 10mm trocar was placed at the right McBurney’s point as seen in Fig. 1, then the intra-abdominal pressure was lowered to 10-12mm Hg and maintained at that level.

At this point the surgeon can visualize two folds in the field. The right fold shows the vas and the left one shows the spermatic veins. The spermatic vessels were identified and a T-shaped incision was made in the posterior peritoneum, the vascular bundle was grasped with forceps and the spermatic vein and artery individually displayed, the artery was identified as a pulsatile vessel.

The spermatic veins were clipped using four clips, two distal and two proximal and then divided in between.

Finally the abdominal cavity was examined for bleeding, the abdominal pressure was decreased, the trocars were removed under laparoscopic vision and the fascia of the incision and other trocars sites were closed with absorbable sutures. Finally the skin was approximated with absorbable sutures.

Results

The mean operative time was shorter in group I (15 minutes) compared to that of group II (25min). There were no major perioperative complications in both

groups. Eight (8%) patients of group II had bleeding during surgery but did not require blood transfusion compared to only 2 patients (2%) in group I who bled from the spermatic veins and were controlled by clipping. One patient (1%) of group I developed abdominal wall hematoma which was treated conservatively, and another (1%) had urine retention which did not need catheterization, compared to 4 (4%) patients in group II, two of whom needed catheterization.

One patient in group I developed shoulder pain that disappeared on discharge the next day. Pethidine was more prescribed to patients in group II than group I. While group I patients were discharged the same day or the next day, group II patients had a mean hospital stay of 3 days (range 2-7 days). Group I patients returned to normal activities in a mean of 10 days while group II needed a mean of 14 days. The recurrence rate was higher (10%) in group II than group I (4%) patients. Regarding wound infection none of group I developed wound infection while two did in group II that was treated with open drainage with an additional 7 day hospital stay. The rest of the results are shown in Table I.

Discussion

Laparoscopic surgery has become popular in the surgical treatment of varicocele owing to its efficiency, minimal invasiveness and lower morbidity rate⁽⁵⁾. It is a simple and safe technique with good efficacy⁽⁶⁾. To date, it is one of a few procedures that seem to be suitable for a one-day laparoscopic surgery⁽⁷⁾.

In this study, the mean operative time and complication rates were comparable for both groups (Table I). Perioperative bleeding was less in the laparoscopy group with significantly better post operative parameters, such as earlier oral intake, less pethidine equivalent consumption, shorter hospital stay and convalescence compared to the open surgical group.

The major advantage of the laparoscopic approach is the ability to operate upon the contra-lateral area if it is diseased at the same operation with only little increase in operating time.

One disadvantage of the laparoscopic method is an increase in cost because of the equipment required but with earlier returns to work we believe this cost is outweighed by the benefits to patient and society⁽⁸⁾.

Conclusion

Laparoscopic varicocelectomy is a safe, effective and minimally invasive technique.

In addition to its better cosmetic results and advantages in cases of bilateral disease, it allows excellent exposure and control of the affected vessels.

Furthermore the short hospital stay and the earlier return to normal activities are very important advantages in recommending this technique as an efficient alternative to the open surgical method.

Table I. Comparison of laparoscopic varicocelectomy and open varicocelectomy

	Laparoscopic Varicocelectomy (n=100)	Varicocelectomy (n=100)	P - Value
Mean operative time in minutes (range)	15 (12-25)	25 (18-45)	<0.001
Perioperative bleeding (number of patients)	2 (2%)	8 (8%)	<0.001
Mean hours before starting oral intake	6	10	<0.001
Mean milligrams pethidine equivalent (range)	75 (50-100)	150 (125-225)	<0.001
Mean hospital stay in days (range)	1 (1-2)	3 (2-7)	<0.001
Mean return to normal activities in days (range)	10 (5-15)	14 (10-25)	<0.000
Urine retention (number of patients)	1	4	>0.2 N.S*
Suture sinus (number of patients)	0	2	^
Abdominal wall hematoma (number of patients)	1	0	^
Wound infection (number of patients)	0	2	^
Number of recurrences (%)	4 (4%)	10 (10%)	<0.08

*N.S = Not Significant

^ = Invalid

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