

Varicocele surgery as day surgery—a regional hospital experience

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Abstract

From July 1994 to February 2001, 60 patients underwent varicocele surgery in the Day Surgery Centre, Department of Surgery, Kwong Wah Hospital, Hong Kong SAR, PRC. The mean age of these patients was 25.9 years (ranged 9–66). Their symptoms included pain/discomfort (41.7%), mass/swelling (36.7%), infertility (8.3%) and cosmetic reasons (1.7%). In seven patients the indication was not clearly defined. 31 (51.7%) varicocele operations were laparoscopically performed, 26 (43.3%) by an open method and in four patients (6.7%) the method was not mentioned. The median operative time was 34 min. We successfully reduced or abolished the symptoms of varicocele in 68.7% of patients whose indication was pain or discomfort and restored fertility in 80% of patients whose indication was infertility. There was only one unplanned hospital admission. There were no anaesthetic or post-operative complications. Varicocele surgery performed on a day surgery basis is feasible, with a high operative success rate and potential cost reduction.

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1. Introduction

Varicocele is a state of varicosity and tortuosity of the spermatic veins presumably due to absent or incompetent venous valves. Varicoceles typically develop during adolescence and according to Western data, they have been found in about 15% of the general male population. Among men examined for infertility the incidence is as high as 40% [1]. It is considered to be the most common treatable cause of male infertility. It is also one of the manifestations of renal cell neoplasm because of renal vein tumour thrombus causing persistent dilatation of the pampiniform plexus irrespective of postural changes [2].

In Hong Kong, pain and dragging sensation in the scrotum are the main symptoms for specialist referral and treatment, in contrast to infertility in Western countries.

The classical operation for varicocele is ligation of the testicular veins in various sites including scrotal, infra-inguinal, inguinal [3], and retro-peritoneal [4]. Patients are hospitalised for a few days and may require 1–2 weeks' post-operative convalescence in uncomplicated patients [1]. With the development of videolaparoscopy and technically sophisticated laparoscopic instruments, laparoscopic

abdominal surgery has become an alternative, with decreased morbidity and costs [1]. Laparoscopic varicoelectomy was first introduced by Aaberg in 1991 [5], and it has been shown in several studies to be a safe and effective method [5–8].

To further reduce cost, surgery performed on an outpatient or day surgery basis has been evaluated widely. Most studies show that this is an attractive way to treat varicocele, with good results and a substantial reduction of costs [1,9,10]. In this report, we present our experience of varicocele surgery in a day surgery centre in a regional hospital of Hong Kong.

2. Methods

Sixty consecutive patients in the period between July 1994 and February 2001 were recruited. Data was collected prospectively and results were analysed. Mean age was 25.9 years (9–66). The indications for surgery were pain/discomfort in 25 (41.7%) patients, mass/swelling in 22 (36.7%) patients, infertility in five (8.3%) patients and cosmetic reasons in one (1.7%) patient; in seven patients the indication was not clearly defined (Fig. 1).

Diagnosis was confirmed clinically. Patients then attended the Day Surgery Centre for pre-operative assessment for fitness for operation. This included a pre-operative

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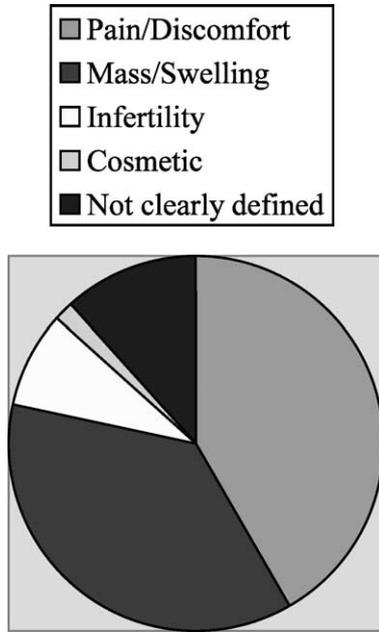


Fig. 1. Indications for surgery.

questionnaire, measurement of body weight, blood pressure and pulse, and urinalysis. In patients over 40 years a renal function test, haemoglobin measurement, ECG and chest X-ray were required. An appointment for surgery, pre-operative instructions and a patient information pamphlet were given to the patients. The contra-indications to day surgery are shown in Table 1.

On the day of operation, the surgeon and anaesthetist reassessed the patient. All of the day surgery cases were scheduled in the morning. Open varicocele surgery was performed by retroperitoneal approach. Laparoscopic surgery was performed by the method as described by Tang et al. [2].

Patients were kept under close observation after the operation and subsequent discharge was allowed only when they had been assessed by the surgeon and anaesthetist. Advice on wound care and subsequent follow-up were given to patients prior to discharge.

Table 1
Contra-indications to day surgery in Day Surgery Centre, Department of Surgery, Kwong Wah Hospital, Hong Kong SAR, PRC

(A) Medical	Unfit (not ASA I or II) Obese: body mass index > 35
(B) Patient	Specific problems, e.g. recurrent hernia Size of pathology, e.g. large scrotal hernia Operation over 1 h
(C) Social	Live in more than 1 h drive from day surgery unit No competent relatives or friends to Accompany or drive patient home after operation Look after him or her at home for 24–48 h At home with no access to Telephone Indoor toilet/bathroom Lift—if the patient lives in an upper floor flat

Post-operative analgesia was given according to a standard regime designed for all patients in the Day Surgery Centre [11]. Before incision, patients were given a dose of diclofenac as a suppository. Local anaesthetic infiltration was used in addition to general anaesthetic techniques. Acute pain control was carried out during the patient’s stay in the Day Surgery Centre. Upon discharge, they were given diclofenac suppositories (0.5 mg/kg) for 2 days together with non-opioid oral analgesics for 1 week.

A telephone hotline was available to patients upon discharge so that they could contact nurse specialists or surgeons if necessary. Advice was given over the hotline, but if the problem could not be solved or if they were not satisfied, they were advised to attend the Accident and Emergency Department immediately.

Telephone interviews with patients were conducted about 24 h after the surgery. Nursing staff of the Day Surgery Centre used a standardised questionnaire to enquire about the degree of wound pain, the amount of analgesia required and the level of pain control. They were also asked about the wound condition and any post-operative complication experienced. Advice was also given at the same time if necessary.

3. Results

Sixty patients with 63 varicoceles were recruited. The varicocele was left sided in 45 (75.0%) patients, right-sided in one (1.7%) patient, and bilateral in three (5.0%) patients. The location was not mentioned in 11 (18.3%) patients.

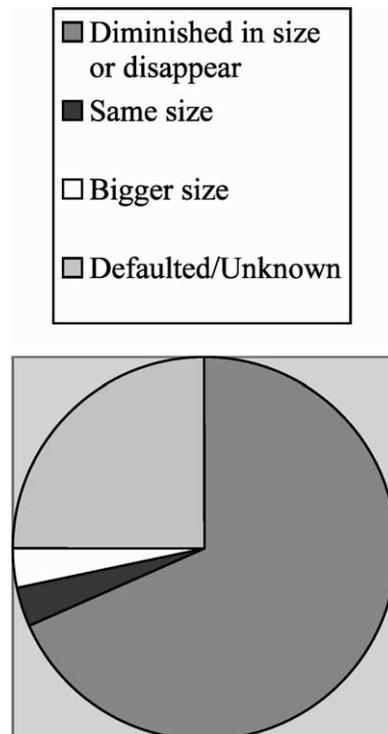


Fig. 2. Post-operative size of varicoceles.

Operative time ranged from 19 to 65 min (median 34 min). Thirty-one (51.7%) operations were performed laparoscopically and 26 (43.3%) were performed by an open method. There was no conversion in the laparoscopic surgery group.

Only one patient was admitted after surgery due to lower limb weakness and he was discharged 1 day after admission and the symptoms completely subsided. No other anaesthetic or post-operative complications were reported.

Fifteen patients defaulted follow-up. The results were unknown. The median follow-up period was 190 days. The varicocele decreased in size or completely disappeared in 41 (68.3%) patients, remained static in two (3.3%) patients and increased in size in two (3.3%) patients (Fig. 2). The discomfort decreased or disappeared in 41 (68.3%) patients and persisted in four (6.7%) patients. Four out of five (80%) patients operated for infertility successfully conceived.

4. Discussion

Day surgery is defined by the Canadian Hospital Association as 'Hospital based services in which scheduled elective surgical, diagnostic and/or therapeutic procedures are provided to patients who are admitted and discharged the same day through organised programmes with defined pre-operative and post-operative procedures.' It is a common practice in Western countries being increasingly used in most surgical specialties. Day surgery reduces the cost of hospitalisation [9]. Day surgery in Hong Kong is still in its infancy and under development. In the atmosphere of escalating financial stress on the public health system in Hong Kong, day surgery is a feasible option in reducing costs. In one study performed in the USA, the average cost of ambulatory varicocele surgery was only 25% that of an equivalent inpatient procedure, with a mean cost of US\$372 (HK\$2976) and US\$1536 (HK\$12 288) per person, respectively [9].

Our experience shows that laparoscopic or open varicocele surgery can also be performed as a day surgery procedure in Hong Kong. The median operative time was 34 min. Our operative time seems to be better when compared with other similar studies because we have included 26 open varicocele procedures. In one study performed in the USA, the average operative time was 82.3 min for laparoscopic varicocele surgery and 35.6 min for open varicocele surgery [12]. In another study of outpatient laparoscopic varicocele surgery the mean operation time was 51 min [1].

We had only one unplanned hospital admission. The success rate was nearly 70% in reducing symptoms of varicocele and four out of five (80%) patients operated for infertility successfully conceived. Close post-operative observation and information concerning post-operative management and possible complications are mandatory as shown in our protocol.

There were two major drawbacks in our study. First, this study was a retrospective study and the result of open versus laparoscopic technique and the result of day surgery versus conventional in-patient treatment were not comparable. Second, we did not perform financial evaluation, although the experience in other countries shows that it is a cost effective procedure [1,9]. Further studies may help us to evaluate clearly the cost saving aspect of ambulatory varicocele surgery in Hong Kong.

In conclusion, varicocele surgery performed as day surgery basis is feasible, with a high operative success rate and potential cost reduction.

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