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Ambulatory surgery for hydrocele: a review of 200 cases

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In a prospective study, 200 cases of hydrocele of tunica vaginalis testis were treated by ambulatory surgery. Lord's technique was performed under local anaesthesia. A modified simple scrotal dressing was used to facilitate ambulation. In one case (0.5%), haematoma was reported. There was no wound infection, though in three cases (1.5%) there was recurrence. Patients tolerated the procedure well and ambulation was excellent in all cases. On the grounds of safety and cost effectiveness, most hydrocele repair procedures should be performed on an ambulatory basis.

Key words: Ambulatory surgery, tunica vaginalis, hydrocele

Introduction

In today's world, where time is valuable, all patients demand a speedy recovery from their ailments with minimal pain and discomfort. To keep pace with this and cope up with our patients' demands, while at the same time not compromising on patient care, we started to undertake ambulatory hydrocele surgery.

Performing surgery on patients on an outpatient basis is not a new concept. However, the rediscovery, refinement and extension of ambulatory surgery has come about only in the last two decades.

Ambulatory surgery should be performed for well selected surgical problems which can be managed on an elective basis. The surgical procedure should not last long, with a maximal duration of 1 h and the surgical technique used should involve minimal dissection, thereby minimizing intraoperative haemorrhage and postoperative tissue oedema. These are usually responsible for postoperative pain and discomfort, rendering the patient non-ambulatory and bed-ridden.

It has been routine for hydrocele surgery to involve bulky scrotal dressings and postoperative hospitalization for a minimum period of 72 h for early detection of postoperative scrotal oedema and/or haematoma.

In order to assess whether hydrocele surgery could be performed on an ambulatory basis we undertook a prospective study of 200 cases, performed in our outpatient operating theatre with a postoperative observation period of 2 h¹. Lord's repair² was performed under local anaesthesia involving spermatic cord block. We

have found the procedure to be safe, simple, cost effective and highly acceptable to the patients. We also used a modified simple and slim elastic compression dressing, which was effective in providing support and assisted ambulation.

Patients and methods

Two hundred patients between the ages of 16 and 68 yr were selected. The criteria for selection were acceptance of local anaesthesia for the procedure, absence of any concurrent untreated medical illness (especially diabetes), absence of local infection, presence of a translucent hydrocele indicating clear fluid with a thin pliable sac and absence of any co-existing pathology of the inguinoscrotal region, such as epididymo-orchitis, hernia or varicocele.

Laboratory investigations included a complete haemogram to rule out anaemia and eosinophilia (filariasis being one of the common causes for hydrocele in our country). Routine urine analysis was also performed to exclude urinary tract infection and diabetes. In the case of eosinophilia, empirical treatment with diethyl carbamazine for a period of 3 weeks was given before surgery. If urinary tract infection was present, it was treated with suitable antibiotics as per urine culture report before surgery.

Surgical procedure

The patients were asked to fast for 12 h preoperatively. Written, valid consent for the procedure was taken and the scrotum shaved. Premedication with intramuscular

atropine 0.6 mg was given. Before taking patients into the operating theatre they were asked to evacuate their bladders.

After cleaning and draping 5 ml of 2% lignocaine was injected into the cord at the root of the scrotum and another 5 ml was injected into the layers of scrotum at the chosen site of incision after grasping the scrotum and tensing the hydrocele.

An incision of 5 cm in length was made parallel to the median raphe. The incision was deepened in layers to the tunica vaginalis parietalis. The sac was opened in the same line as the incision. No plane of cleavage was created between the layers of the scrotum and haemostasis at the site of incision was obtained using fine haemostats. No cautery was used to avoid the risk of postoperative oedema. On opening the sac, hydrocele fluid was drained and the testis was delivered. Plicating stitches were taken on the inner aspect of the tunica vaginalis parietalis to draw it up into a cuff around the testis. Five to six stitches were usually required. The wound was irrigated with 1% povidone-iodine and the testis was repositioned back into the scrotum. The wound was closed in two layers, dartos muscle layer with chromic catgut and skin with black silk. No drain was used.

Benzoin tincture was applied over the scrotum, and on the lower abdominal wall over an area 5 cm lateral to the symphysis pubis on either side. A 15 cm length of Elastoplast (Ethicon, Johnson and Johnson, India) was divided longitudinally for two-thirds of its length. After protecting the incision site with a gauze piece, the broad uncut portion of the adhesive plaster was applied to the scrotum ensuring that the cut edge was at the base of the penis. The scrotum was then pulled over the pubic symphysis and the cut portions of the elastoplast were stretched and applied to the lower abdominal wall. Another 15 cm length of elastoplast was divided longitudinally along its entire length and each piece was applied laterally to cover the scrotum and give additional support. During the application of benzoin tincture as well as the adhesive plaster, care was taken to avoid the inguinal ligament and the medial aspect of the thigh, to prevent discomfort during ambulation.

After 2 h of postoperative observation the patients were discharged on oral analgesics for 3 days. One dose of antibiotic was given intramuscularly on a prophylactic basis. Patients were asked to report on the next day to the outpatient department for examination. If no pain or tenderness was reported and the wound was devoid of soakage, which was usually the case, it was left undisturbed and the patient was advised to return for follow-up after 7 days for removal of sutures.

Results

All patients tolerated the procedure well. The mean duration of surgery was 25 min with a maximum of 45 min. There were no anaesthesia-related complications.

No patients complained of pain either intraoperatively or postoperatively. All patients were subjected to Lord's operation except one patient, whose hydrocele had a positive transillumination test on preoperative clinical assessment but intraoperatively was found to have a thick, calcified and rigid sac. He was treated by subtotal excision of sac and scrotal drainage. He also tolerated the procedure well and was comfortable and ambulatory in the postoperative phase.

In one patient (0.5%), scrotal haematoma was detected on the first postoperative visit when he attended for local examination of the wound. He had severe pain and swelling of the scrotum and was admitted. His scrotum was evacuated and packed. The pack was removed after 24 h and the wound was re-sutured. The patient subsequently made a full recovery. There was no incidence of wound infection in the entire series. No patient complained of any postoperative or dressing-related discomfort. All were ambulant and led a normal active life in the postoperative period.

Over a follow-up period ranging from 6 months to 3 yr three patients have reported back with recurrence. These three cases belonged to the initial series of 75 cases when absorbable 3(0) chromic catgut (Ethicon) was used for plicating. Subsequently we used non-absorbable 3(0) mersilk (Ethicon) in the rest of the 125 cases. Since then we have not encountered any recurrence.

Discussion

Before hospitals evolved as important institutions in our society ambulatory surgery was the oldest known form of surgery. In recent decades most surgical procedures have been performed in a hospital setting. According to the American Hospital Association³, many minor surgical procedures do not require hospitalization. During the 20th century there have been repeated attempts to re-popularize and extend the advantages of ambulatory surgery. This method of providing surgical care is of advantage to patients, surgeons and providers of health care. As far as the patient is concerned, as long as there are no increased risks, a day case procedure is convenient since there is minimal alteration to his life-style, decreased anxiety, early resumption of work, along with reduced cost. From the surgeons point of view, there is a decreased incidence of nosocomial infections as there is less congestion in the wards. His attention can be focused on the critical patients since there is less ward work due to fewer admissions. The hospitals benefit by increased use of facilities and reduction in the costs involved.

Safety of the patient does not involve a choice between inpatient and outpatient procedures. Safety is an attitude of mind, and when good practice is followed in selection of patients and techniques by the surgeon, there is no reason to expect more complications in an outpatient setting than with hospitalization⁴.

Scrotal haematoma is a curse in hydrocele surgery,

the loose tissue of the scrotum giving rise to oedema and haematoma postoperatively if haemostasis is not adequate. It is not uncommon to end up with a scrotum larger than its original size. It is for this reason that many surgeons have been reluctant to discharge patients at an early stage after hydrocele surgery. The average duration of hospitalization in the absence of complications has therefore been between 2 and 6 days^{5, 6}.

Ambulatory surgery for hydrocele in a general hospital such as ours reduced the cost by one third compared to inpatient surgery (Rs. 50 vs. Rs. 150).

Hospitals must therefore plan and provide outpatient surgical facilities so that appropriate surgeries can be performed on an outpatient basis, enabling patients to be ambulant in the postoperative phase, reducing the

cost to the patient, the hospital and the community and assuring optimal use of inpatient beds.

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