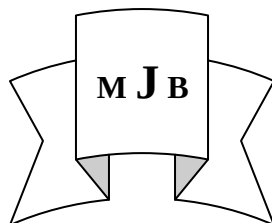


Excision of the Tunica Vaginalis as New Modality for Adult Hydrocelectomy

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Abstract

The present article, describe a new surgical technique for hydrocele. This technique involves total excision of tunica vaginalis sac. This surgical method was different from that of the standard operative procedures-Jabouley's and Lord's. Our technique required no suture material in thin tunica vaginalis sac and running suturing for this with thick sac. Thus the technique appeared to be simple and safe, and minimize the postoperative scrotal and testicular swelling, which is the most troublesome problem following the standard operative procedures. even when carried out by junior surgeon.

Key words: hydrocele, tunica vaginalis, hydrocelectomy

قص الغلالة الغمدية كتقنية جديدة لأستئصال القيلة المائية لدى البالغين

الخلاصة

تصف الدراسة الحالية تقنية جديدة لعلاج القيلة المائية لدى البالغين وهذه التقنية تتضمن القص الكلي لكيس الغلالة الغمدية وهي طريقة جراحية تختلف عن الطرق الجراحية الشائعة (طريقتي جابولي و لورد). حيث هذه التقنية لا تحتاج الى استخدام الخياطة للغلالة الغمدية الرقيقة وباستخدام خياطة مستمرة لكيس الغلالة الغمدية السمكية لذلك تظهر هذه الطريقة بسيطة وأمنة ومع نسبة ضئيلة من تورم الخصية وكيس الصفن بعد العملية (والذي يعتبر من اهم المشاكل التي تواجه المريض بعد عمليات استئصال القيلة بالطرق الشائعة) حتى ولو تم اجراءها من قبل الأطباء الجدد.

Introduction

Hydrocele is defined as an abnormal free-fluid collection between the visceral and parietal layers of tunica vaginalis testis [1], which is idiopathic in most cases but in some cases may be secondary to various pathologies like infections (orchitis, epididymitis, tuberculosis or filariasis), testicular torsion, tumour or trauma.[2,3] The diagnosis is essentially clinical, but where doubt exists, scrotal ultrasound can be used to differentiate it from other scrotal lesions [4,5].

Although controversy exists regarding the treatment of hydrocele, hydrocelectomy remains the treatment of choice for hydroceles. Jabouley described partial excision with

eversion of the sac [6]. while Lord described plication of the sac to expose tunica vaginalis visceralis to the scrotal wall and its lymphatics [7].

It is a well-known fact that the most troublesome problem following hydrocelectomy is scrotal swelling which lasts for not less than I month and sometimes up to several months [8].Which is usually due to a combination of the usually exaggerated inflammatory oedema, and accumulation of serosanguinous oozes from the hydrocelectomy site, and these two factors in making the scrotal swelling large, very discomforting and difficult to resolve quickly.In addition to that ,the everted or plicated tunica voginalis resulted in large testicular size..so The swelling is

usually large, sometimes larger than the original problem [9].

Objective

To ascertain the acceptability of complete resection of tunica vaginalis in hydrocelectomy as modality in adult hydrocelectomy with morbidity reduction and lower recurrence rate.

Patients and Method

Eighty two patients with age(19-67years) were presented to Al-Hilla Teaching Hospital/Babil-Iraq,(March 2008-October 2011) with hydrocele figure(1), they evaluated; history, clinical examination (Transillumination test), scrotal ultrasonography, any suspicion of testicular tumor excluded from the study, also all patients investigated as apart from preparation to surgery,include Hb%, PCV, blood sugar, renal function test, and chest x-ray. ECG for those patients with age >40 years.

Procedure

Under either general anaesthesia or regional anaesthesia(epidural or spinal), supine position, the hydrocele sac was reached by standard vertical incision on the scrotum to expose tunica vaginalis parietalis,figure(2)(while for those patients with bilateral hydrocele,single longitudinal incision on median raph). After reaching the sac it was dissected all around from

the scrotal wall. First, a small nick is made into the exposed fluid-filled sac allowing for drainage figure (3). The testes were visually identified and the sac longitudinally opened. The "excision technique" involved complete resection of the sac wall of the tunica vaginalis(keep 2-3 mm edge to ovoid epididymal injury and facilitate haemostasis) figure(4 and5), then hemostasis using electrocautery for the thin tunica figure(6), or with a running absorbable chromic suture(3/0) for thick one figure (7) , with care to achieve the best possible hemostatsis, a small corrugate drain figure (8), which removed after 12-24 hrs figure (9). The wound was closed in layers, starting with a running absorbable suture for the Dartos layer. Interrupted non-absorbable suture was used for the skin, and a sterile pressure-type dressing applied.

The patients were discharged after removal the scrotal drain (12- 24 hrs). all the patients presented after 7-9 days postoperatively and evaluated for the swelling, discomfort, skin infection, collection, and the removal of the stitches.

Results

The total number of the patients 82 with age (19-67)years, distribution in to 39 left, 35 right, and 8 bilateral(table 1). Epididymal cyst found in 5 patients.

Table 1: The distribution of the laterality of the disease

Side(laterality)	No, of patients
Left	39 (47.56%)
Right	35 (42.68%)
Bilateral	8 (9.75%)
Total	82 (100%)

The general anaesthesia used in 65 patients, while the remaining 17

patients, underwent the surgery with regional anaesthesia (table 2).

Table 2 The distribution of patients with type of anaesthesia.

Type of anaesthesia	No, of patients
General anaesthesia	65 (79.26%)
Regional anaesthesia	17 (20.73%)
Total	82 (100%)

Regarding the need to running suturing for haemostases, in 61 patients, while

the others the haemostasis achieved by electrocautery alone (table 3).

Type 3 The distribution of patients with type of haemostasis

Type of haemostases	No, of patients
Absorbable suturing	59(71.95%)
Electrocautery	23 (28.04%)
Total	82 (100%)

The time required for the operation is 10-20 minutes

The drain used in all the patients, which kept not more than 24 hrs.

Regarding the postoperative complication, (haematoma, collection, abscess) not reported, while wound infection in 7(8.53%) patients, which respond to antibiotics with local cleaning & dressing.

All the patients with normal scrotal examination after one month postoperatively.

Discussion

The standard surgical procedures for hydrocele can cause postoperative discomfort and complications, in Jabouley's technique time is lost in partial excision of the sac as well as achieving haemostasis. If the sac is not adequately excised, blood or serum may accumulate behind the testis, predisposing to infection [10], while Plication helps in achieving haemostasis and obliteration of dead space behind the testis. This rules out collection of blood, but leaving excessive sac wall of the tunica vaginalis and have infection, while in complete excision of the tunica in this

procedure, there is no dead space, no excessive tissue, and presence of drain will prevent or minimize the complications. The time required for the operation is not different from the other standard methods 10--20 min. and the need for the suture material is less, so the proposed modified technique appears to be simple, safe and less complications, and can be employed routinely for adult vaginal hydrocoele. The excision requires more meticulous hemostasis (best obtained with electrocautery) [11].

All the cases had minimal scrotal swelling and virtually no discomfort. There is no recurrent condition recorded.

Conclusions

Total excision of tunica vaginalis is the new modality in which the other surgeons can achieve hydrocelectomy as the usual procedure in surgical practice.

References

1-Krone KD, Carroll BA. Scrotal ultrasound. Radiol Clin North Am 1985;23:121 -139.

- 2- Sivam NS, Jayanthi S, Ananthakrishnan N, Elango A, Yuvaraj J, Hoti SL, et al. Tropical vaginal hydroceles. Are they all filarial in origin? Southeast Asian J Trop Med Public Health. 1995;26:739. [PubMed]
- 3- Ku HJ, Kim ME, Lee NK, Park YH. The excisional, placcation and internal drainge techniques: a comparison of the results for idiopathic hydrocele. BJU Int. 2001;87:82–84. [PubMed]
- 4- Akpo EE. Giant Hydrocele. African Health Sciences. 2005;5(4):343–344. [PMC free article] [PubMed]
- 5-Ananthakrishnan N, Pani SP. Surgery for vaginal hydroceles: an update. Indian J Urol. 2005;21:35–38.
- 6-Sell Rs. Clinical Anatomy for Medical Students, 2nd Asian ed. Tokyo: Medical Sciences Int Ltd; 1981, pp 144-145.
- 7-Smith DR, In: Tanagho EA, McAnich JMI, editors. Smith's General Urology, 13th ed. USA: Prentice Hall International; 1992, pp 621-622.
- 8-Hydrocelectomy. Encyclopedia of Surgery: a Guide for Patients and Caregivers (2006). www.surgeryencyclopedia.com/Fi-la/Hydrocelectomy.html.
- 9-Lee S. L., Du Bois J. J., Shekherdimian S. Hydrocele. 2006 eMedicine, www.emedicine.com/med/topic2778.htm.
- 10-Bhattacharyya SK. Short Cases in Surgery, 3rd ed. Delhi: CBS Publishers; 1987, pp 127-128.
- 11-De DeVries CR, 2002. The role of the urologist in the treatment and elimination of lymphatic filariasis worldwide. BJU Int 89 (Suppl 1): 37–43.



Figure 1 left hydrocele



Figure 2 vertical incision on the scrotum to expose tunica vaginalis parietalis

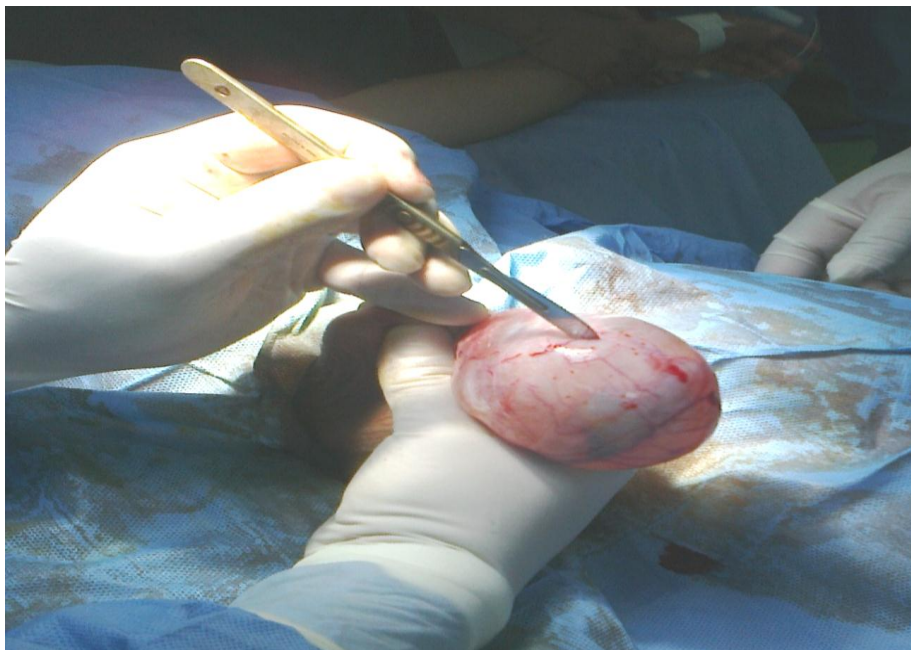


Figure 3 a small nick is made into the exposed fluid-filled sac allowing for drainage

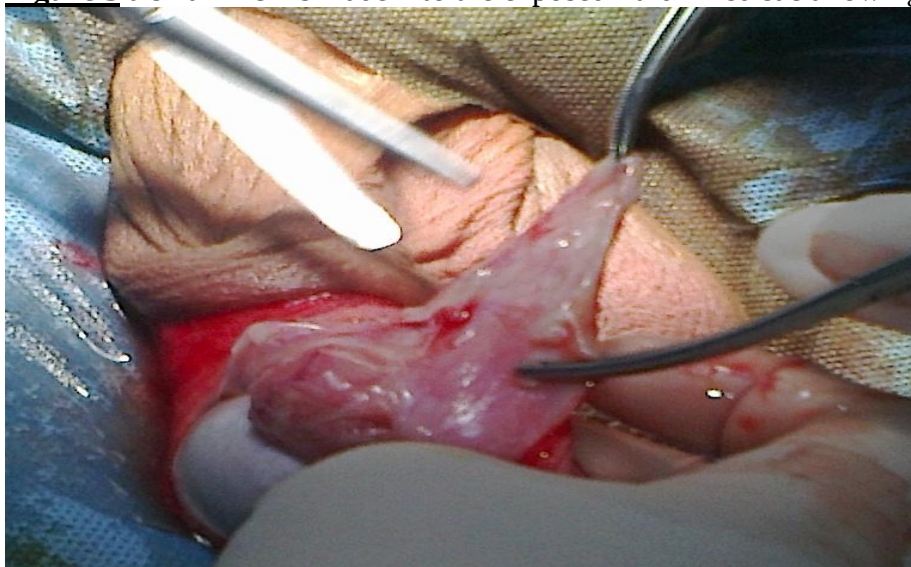


Figure 4 complete resection of the sac wall of the tunica vaginalis



Figure 5: keep 2-3 mm edge to avoid epididymal injury and facilitate haemostasis

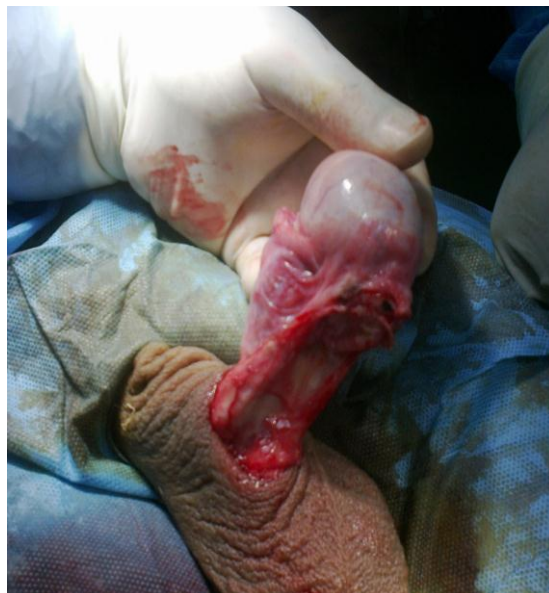


Figure 6 hemostasis using electrocautery for the thin tunica



Figure 7: hemostasis using a running absorbable chromic suture (3/0) for thick tunica



Figure 8: a small corrugate drain



Figure 9 after removal the scrotal drain (12-24 hrs)