International Journal of Science and Research (IJSR)
ISSN: 2319-7064
ResearchGate Impact Factor (2018): 0.28 | SJIF (2018): 7.426

A Study of Patient Profile and Treatment Outcome in Primary Vaginal Hydrocele - A Descriptive Study

Aniket Sharma[1], Deepak Kumar[2]

[1]Resident, Department of Surgery, Armed Forces Medical College, Pune-40, India

[2]Senior Resident, Department of Surgery, Armed Forces Medical College, Pune-40, India

Abstract: ***Scrotal swellings constitute a major load of General surgery OPD in Indiaand cause a lot of psychological disturbance to the patient and his family. Newer and minimally invasive techniques have been described for treatment of hydrocele. However standard treatment for hydrocele is conventional surgery till date.True incidence of hydrocele in general population is still a grey area. Method: This is a descriptive study carried out between Aug 2017 and Jul 2019on 75 cases of primary vaginal hydrocele. Result: Majority of the patient fell in the age group 30-50 years with 85 % presenting with the swelling alone and 15 % presenting with discomfort associated with the swelling. 85 % of the patients underwent eversion of sac and rest 15% underwent excision of sac. 66% (n=50) of the study population belonged to the upper middle class as per kuppuswamy score. The most common complication as shown in the post-op period was induration of scrotal skin experienced in 13 (17.3%) of patients and the most significant post op complication affecting hospital stay was scrotal hematoma.***

Keywords: Hydrocele, Eversion of sac, Excision of sac, Hematoma, visual analogue scale

1. Introduction

Swellings of the scrotum are one of the most common presenting complaints in General surgery OPD. Even though man has excelled in all ventures, the pathogenesis of idiopathic vaginal hydrocele is still a miss despite multiple theories and hypothesis dating back 250 years in the past. (Lascelles and Annis, 1969).

Scrotal swellings can cause a lot of psychological burden to the patient as well as marital disharmony. They affect the normal day to day work and can cause a mental agony to the patient.(1)The spectrum of cystic scrotal swellings consists of hydrocele (most common), epididymal cysts, spermatocoele, haematocoele, pyocoele, chylocoele, parasitic cyst and sebaceous cysts. Indications for treatment include pain, discomfort, cosmetic appearance of the scrotum and the patient's wish.(2)

Hydrocele is the most common cause of painless non acute scrotal swelling in men present to surgeons. The exact incidence of hydrocele has never been determined, but it is a common surgical finding in clinical practice. Condition is more common in tropical countries due to filarial infection. The volume at which tunica vaginalis fluid becomes by definition a hydrocele is still a grey area.

The most common type of acquired hydrocele is idiopathic in origin in general population. Idiopathic hydroceles are thought to be caused by an imbalance between the secretion and reabsorption of fluid within the closed sac of the tunica vaginalis.There are no accurate estimates of the incidence of idiopathic hydrocele in adolescents (3). The second most common cause of scrotal hydrocele in adolescents is varicocelectomy(4).

Hydrocele can also occur secondary to a variety of other testicular conditions. Adult patients with a rapidly growing hydrocele are ultimately diagnosed with a malignant mesothelioma of the tunica vaginalis. Patients with intra-scrotal infections, such as epididymitis, regional or systemic diseases, such as Mumps or those who have undergone abdominal or testicular trauma can also experience hydroceles.(5)

A primary hydrocele results from defective absorption of fluid from the tunica and therefore tends to be relatively large and tense. On the other hand, secondary hydrocele develops from excessive production of fluid from tunica due to a testicular pathology such as tumors, trauma and torsion. Since there is no defect in the absorption of fluid from the tunica sac, these tend to be small in size and are lax to palpate. There may also be thickening of the cord. (6)

Some of the commonly done surgeries are:

a) Excisional technique (for thick walled sac and multi-loculated hydroceles).
b) Jaboulay's procedure (for large, thin and floppy sac).
c) Lord's Plication

In Eversion of sac through a scrotal incision, the hydrocele sac is opened, the fluid sucked out and the edges of the sac are everted and stitched together on the back of the testis preferred in hydrocele with thin sac. In excision of the sac (hydrocelectomy) whole of the sac is excised and the remaining edge is sutured by continuous catgut or electrocauterized to prevent haemorrhage preferred in hydrocele with thickened sac as in filariasis. (7)

In hydrocele with thickened walls unless great care is taken to stop bleeding after subtotal excision of the wall (hydrocelectomy), hemorrhage from the cut edge is liable to cause a large scrotal haematoma even if wound is drained. Eversion of the sac with placement of the testis in a pouch is an alternative with less risk of hemorrhage. (8)The Lord's technique differs from excisional hydrocelectomy and the Jaboulay approach because there is minimal dissection between the layers of Dartos and tunica vaginalis with no delivery of the hydrocele sac outside of the scrotum.

Postoperative recovery after scrotal surgery can be complicated owing to the lack of supportive structures surrounding the testis and can be accompanied by complications such as hematoma, testalgia, and infection. It has also been traditionally felt that a large volume hydrocele is best treated with excision of the sac due to the redundant tissue and residual scrotal bulk caused by the plication of the Lord's procedure.(9)

Sclerotherapy is another treatment option with a single treatment success rate ranging from 33% to 75% (Levine and Dewolf, 1988). This may be a good choice for patients who cannot tolerate anesthesia or who refuse surgical treatment. The common steps of the procedure include needle aspiration of the hydrocele fluid, followed by injection of local anesthesia, and ultimately instillation of the sclerosing agent. The most commonly used sclerosing agent is tetracycline (500 mg), although 2.5% phenol solutions, 95% alcohol, and ethanolamine oleate have also been used effectively (Nash, 1984; Hellström et al, 1986; Miskowiak and Christensen, 1988).

2. Materials and Methods

Objectives-To study the clinical profile of patients and treatment outcome in patients with vaginal hydrocele undergoing surgery such as - recurrence rates, and time taken to resume normal physical activity.
An observational study was carried out at our tertiary care teaching hospital between Aug 2017- Jul 2019 with 75 subjects meeting the inclusion criteria.

Inclusion criteria:
Unilateral/ Bilateral primary vaginal hydrocele

Exclusion criteria:
a) Secondary Hydrocele
b) Other scrotal pathologies like hematocele, pyocele, chylocele, filarial scrotum etc.
c) Hydrocele associated with inguinal hernia.

Surgical Procedure
Patients underwent either eversion of sac or excision of sac based on intra-op assessment of the sac.

Outcomes measured and timeline
After surgical intervention, all patients were evaluated during hospital stay, at the time of suture removal, 3 weeks post operatively and 3 months post-operatively

Outcomes measured
Pain- Based on visual analogue scale, size of the swelling, duration of swelling, fever, hematoma and infection, duration of Post-op hospitalization, recurrence, return to normal physical activity- calculated in days- time period taken to return to workplace

3. Results

A total of 75 patients were part of the study. Patients fell in the age group 23-71 years (Median-49yrs). All patients presented with a cystic painless swelling and trans-illumination positive clinching the diagnosis of primary vaginal hydrocele. 85 % of the patients presented with swelling alone and rest 15 % experienced some discomfort with the swelling. However no pain was associated with the swelling ruling out acute inflammation. As shown in Figure 1.

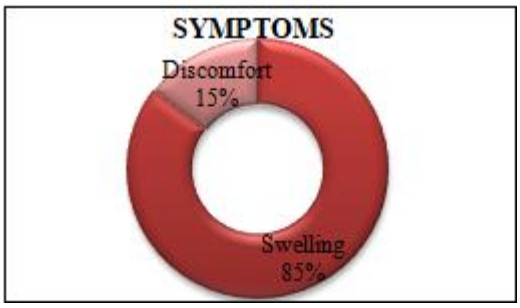

Figure 1: Symptoms

In the study population duration of symptoms ranged from 3 months to 31 months (Mean -14 months). In Majority of patients 36% (n=27) the duration of swelling was 11- 15 months followed by 25% (n=19) presenting after 5 months of symptoms to the tertiary care centre as shown in Figure-2

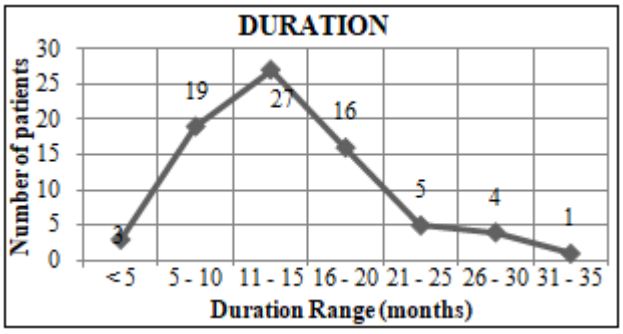

Figure 2: Duration Of Symptoms

66%(n=50) of the study population belonged to the upper middle class as per Kuppuswamy score ranging from 8-26(Mean score 17.4). 6% (n= 5) of the study population belonged to the upper lower class as shown in Figure 3.

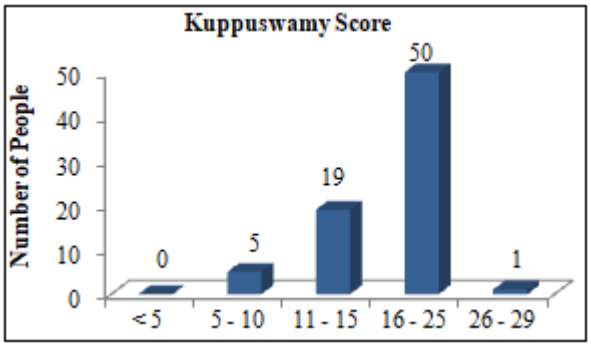

Figure 3: Population Profile

85% (n=64) patients underwent eversion of sac and 15%(n=11) underwent excision of sacas shown in figure-4 based on intra-operative assessment of the sac. Patients with thick sac underwent excision whereas patients with thin and floppy sac underwent eversion of sac.

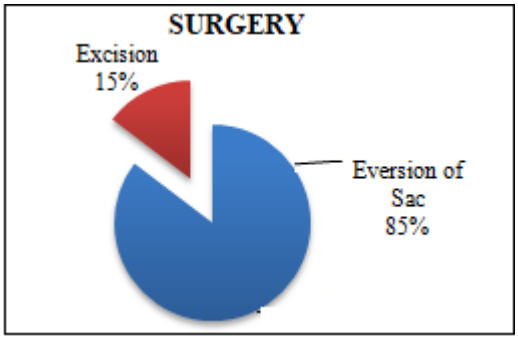

Figure 4: Intervention

Pain score on POD-1 ranged from 1-8 on visual analogue scale (Mean- 2.96).75 % of the patients had a VAS of 2-3 constituitingmajority of the study population as shown inFigure5.

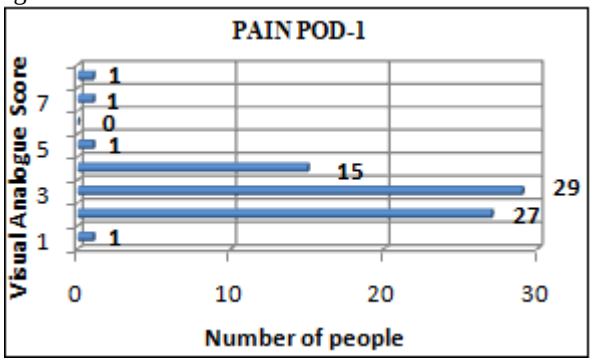

Figure 5: VAS score Post-Operative Day-1

The most common complication as shown in Figure 6 in the post-op period was induration of scrotal skin experienced in 13 (17.3%) of patients. 9 patients (12%) had fever on Post op day 1. 2 patients (2.6%) had hematoma in the post-op period and underwent re-exploration and evacuation of hematoma for the same. 6 patients (8%) had surgical site infection in the post op period and was managed with daily dressing and targeted antibiotics. Hospital stay ranged from 2 – 16 days (Mean-2.84 days) as shown in Figure-7 with maximum hospital stay for patients who developed scrotal hematoma and underwent re-exploration and evacuation.

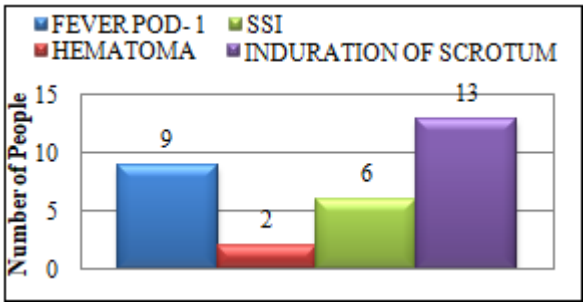

Figure 6: Post-operative complications

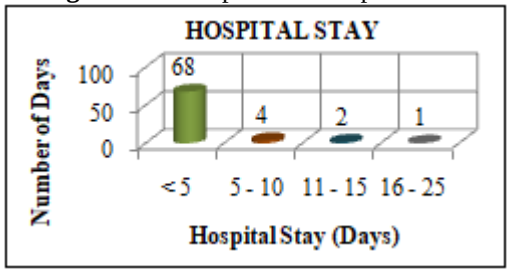

Figure 7: Hospital Stay

Return to normal physical activity ranged from 5-28 days (Mean- 7.33 days) with majority of study population 86%(n=65) returning to work within 5-10 days as shown in figure-8 . Recurrence rate was 0 % in the follow up period of 3 months and all patients had negligible residual swelling on the 3 months post-op follow up.

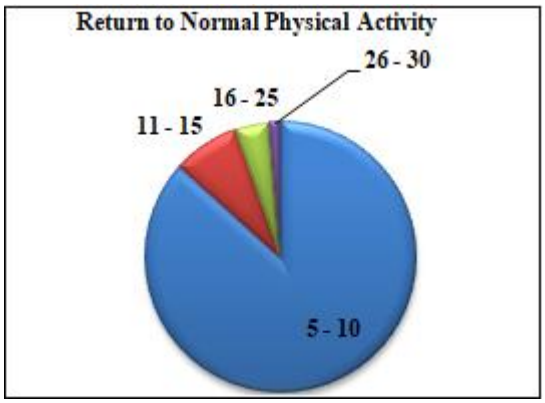

Figure 8: Return to Normal Physical Activity

4. Discussion

The standard treatment of hydrocele is surgical till now with other modalities being described in literature like tapping, injection of sclerosant agents and internal drainage by creating a window in the tunica vaginalis. However these techniques have not found their place in the current management of hydrocele. Disadvantages of surgical procedure are its complications. The commonest postoperative complication appears to be induration of scrotal skin in our study however the most important complications affecting hospital stay and return to normal physical activity are SSI and hematoma formation.

On clinical examination most of the swellings were oval in shape or globular. Local scrotal examination revealed vaginal hydrocele. In most cases scrotal rugosity was lost in hydrocele. It was possible to get above the swelling. Fluctuation and trans-illumination was positive in all cases. All cases were subjected to operative treatment, under Spinal anesthesia. The sac was thin in most cases, thick in some cases and there was no underlying demonstrable pathology in the testis, epididymis or spermatic cord. All patients had mild to moderate severity of pain postoperatively for 24-48 hours.

Surgical procedure for hydrocele includes- Eversion of sac, Excision of sac and Plication of sac as described by Lord in 1963. However in this study plication of sac was not done in any patient. Ku et al 2002 in their study compared the three techniques with respect to post-operative complications.(2) They reported an incidence of hematoma in 2.5% (n=2) of the 80 patients who underwent excision of the sac which corroborates with our study with incidence of 2.66% in the total study population with occurrence in patients who underwent excision of sac.However the incidence of hematoma in was 18.1% (n=2) of the total 11 patients who underwent excision of sac. The study reveals that the maximum incidence of complications like edema, wound infection and hematoma occurred in the excision group corroborating with our study. Campbell et al in their series

of 502 cases also reported an incidence of hematoma to be 2.34% (n=12) amongst the total study population of 502.(10)Dhal et al reported incidence of hematoma in 8.6%(n=2) amongst the 23 patient who underwent excision.(11) Rai et al have reported much higher incidence of hematoma in the excision group.(12) In the latest study by Tsai et al the incidence of hematoma has been reported to be 9% in excision group and 8.5 % in the eversion of sac group. (13)Post op hospital stay is consistent with the study by Usman et al where the average hospital stay was 3 as compared to 2.4 days in our study. (14) At the time of discharge in all patients except those who had hematoma, the size of the scrotum on operated side had reduced considerably and on follow up at 3 months there was no recurrence or any residual swelling.

5. Conclusion

Cystic swellings of the scrotum are common conditions that a surgeon comes across in daily practice. Hydrocele is the most common swelling encountered in all age groups. They are often associated with considerable morbidity in terms of physical, psychological, social, and economic outcomes. Males of all age groups may be affected, the most common mode of presentation being a painless, gradually progressive swelling in the scrotum. Surgical management of hydrocele is the Gold standard for management of hydrocele. Eversion of sac is the commonest surgical intervention for hydrocele, however, it may not be appropriate incases of thick walled, secondary and long-standing hydroceles. Such cases are best managed with partial excision and eversion of the sac.

The evaluation of post-operative period revealed that the in most of the cases it was uneventful. The complications were slightly higher in patients undergoing excision of sac as compared to eversion of sac. Most of the patients got discharged within 5 days of surgery and returned to their normal activity within 5-10 days. Hence, despite the variable size and duration of swelling at presentation, the outcomes are good with surgical management.

References

[1] Babu BV, Mishra S, Nayak AN. Marriage, Sex, and Hydrocele: An Ethnographic Study on the Effect of Filarial Hydrocele on Conjugal Life and Marriageability from Orissa, India. PLoSNeglTrop Dis. 2009 April; 3(4): e414.
[2] Ku JH, Khim ME, Lee NK, Parle YH. Theexcicional placation and internal drainagetechniques: a comparision of the results foridiopathic hydrocele. Int. 2001;87(1):82
[3] Cimador M, Cimador M, Castagnetti M, De Grazia E. Management of hydrocele in adolescent patients. Nat Rev Urol. 2010;doi(10)
[4] Misseri, R., Gershbein, A. B., Horowitz, M. & Glassberg KI. No Title. Adolesc varicocele II Incid hydrocele delayed Recurr varicocele after varicocelectomy a long-term Follow BJU Int 87, 494–498 (2001) 12
[5] Tarantino, L., Giorgio, A., de Stefano, G. & Farella NE (2001). Echo color Doppler findings in postpubertal mumps epididymo-orchitis. Echo Color Doppler Find postpubertal mumps epididymo-orchitis J Ultrasound Med 20,. 2001;
[6] Dr.Jagdish, Medical. Cause and Management of Hydrocele: A Review Article Dr.Jagdish. Bhuj,. 2015;
[7] S C Atri Hand book of surgery,Treatment of hydrocele 3rd edition page number 170-171.
[8] Charles.V.Mann,RCGRussell,Norman.S.Williams.Baile y and Love's short practice of surgery treatment of hydrocele,22nd edition,pages1003-04.
[9] Goldstein M. Surgical Management of Male Infertility and Other Scrotal Disorders. In: Retik A, Vaughan Jr. ED, Wein A, et al., eds. *Campbell's Urology.* Vol 2. 8 ed. Philadelphia: Saunders; 2002:1579-1580.
[10] Campbell M.F. : Hydrocele of tunica vaginalis- Study of 502 cases, SGO, 1927; 45: 192-200
[11] Douglas S. Dahl et.al. : Lord's Operation for Hydrocele compared with conventional
a. techniques, Arch. Surg., Jan 1972; Vol. 104, 40-41.
[12] Rai S. et.al. : Plication operation for hydrocele, I.J.S., Sept. 1978; Vol. 40, No. 9, 481-84.
[13] Tsai L, Milburn PA, Cecil CL, Lowry PS, Hermans MR. Comparison of Recurrence and Postoperative Complications Between 3 Different Techniques for Surgical Repair of Idiopathic Hydrocele. Urology 2019;125:239-42.doi:10.1016/j.urology.2018.12.004.
[14] Usman L, Quddus R, Muhammad AB, Tajammal AS and Abid R. Hydrocele; Surgery Vs Sclerotherapy. Prof Med J. Mar 2008; 15(1): 125-28