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Management and clinical investigation of scrotal cysts

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Abstract

Objectives: Cystic swollen masses in the scrotum can develop to gigantic proportions painlessly. They frequently cause no pain. There are several ways to treat different types of cystic swellings, therefore it is important to find the appropriate course of action for each type that can be handled in our remote hospital setting.

Methods: Prior to analysis, one hundred cases of scrotal cystic swellings that fit the methodological requirements were looked at. The final diagnosis was made via a clinical examination and scrotal ultrasonography. Every case was treated with surgery.

Results: Sixty percent of the patients were right-handed, and eighty-six percent of the patients' main complaint was scrotal edema. The most common cystic swelling (76%) was primary vaginal hydrocele, which was followed by sebaceous cyst, spermatocele, and epididymal cyst. Early patient discharge and little post-operative complications have been associated with the Lord's plication procedure.

Conclusion: Primary vaginal hydrocoele was the most common type of cystic swelling of the scrotum. Most of the cystic swelling were surgically treated with success. Lord's method of surgery resulted in the fewest complications after the procedure.

Keywords: Surgical procedure, scrotum, hydrocele, cystic edema, and cystic enlargement

Introduction

Cystic swellings are the most common surgical difficulty in the scrotum. They affect his bodily well-being, which makes him suffer psychologically. They might provide a subject's sexual and marital life with a solid base^[1]. They may also make subjects and their families more financially and psychologically burdened. They are defined as abnormal collections of fluid in the scrotal cavity. They are associated with the occurrence of all scrotal swellings and affect males of all ages. The scrotum is a bag of skin and intrinsic muscles that houses the testis, epididymis, vas dissimilarity, and spermatic veins. The evolutionary organization of the genito urinary system is complex^[2-5]. The function of the scrotum is to give the testis the optimal conditions for spermatogenesis, an essential process for the survival of a race^[6-11]. Stated differently, the temperature of spermatogenesis is regulated by the scrotum. Most enlargements of the scrotum are benign. There are many different causes of this illness, ranging from less common ones like hematocele, pyocele, and chylocele to more common ones like hydroceles, spermatoceles, and epididymal cysts. Cystic scrotal swellings can grow to large diameters without causing the individual any particular discomfort, and they are often painless^[7-12]. This disorder has a very low death rate. Because of its hanging position and movement as a result of hematocele, the scrotum is susceptible to stress^[13-16].

As a result, morbidity could be quite serious even if the scenario's associated mortality is quite low. The reasons of cystic causes of scrotal enlargement are diverse and include hydrocoele, spermatocele, and epididymal cysts, as well as less prevalent causes such chylocele, pyocele, and haematocoele. Usually, these swells are harmless. People of any age might be affected by cystic swellings, which have a broad spectrum of etiopathology. Because of the wide range of symptoms, it is crucial to identify the most common cause and the age distribution of those causes in order to better prepare for a precise and targeted care of the form^[17]. The current research aims to investigate the numerous problems of the scrotum and its contents that manifest as scrotal enlargement and to highlight the most effective ways to treat them in order to restore the architecture and physiology to the greatest level feasible^[18]. Since there are several approaches to treat meticulous cystic swellings, it is important to choose the most effective approach for each type of scrotal cystic swelling that

may be handled in our remote hospital setting [19].

Methods

A total of 100 cases were chosen for the current hospital-based observational study from the patients who were admitted to the various surgical units at the Department of Surgery, Mahavir Institute of Medical Sciences, Vikarabad, Telangana, India over a period of one year between January 20 15 and December 2015.

Inclusion criteria

Patients between the ages of 50 and 70 who have cystic swellings of the testis, its coverings, the epididymis, the spermatic cord, and the scrotal skin are included in this study.

Exclusion criteria

Testicular torsion, inguinoscrotal edema, acute testicular swelling, and congenital hydrocele are not included in this study.

Methods of collection of data

The Institutional Ethical Committee of the Medical College and Hospital approved this clinical trial, and prior to enrollment, 100 patients between the ages of 18 and 70 were given written informed permission. Using a pre-made proforma with the following items, patients who were admitted with scrotal edema, pain, or discomfort were studied.

Clinical examination

Local investigation

Results are recorded after examination of the testicles, epididymis, and spermatic cords in addition to nearby lymph nodes. Evaluation also includes the skin and swelling itself, as well as the two cardinal signs of fluctuation and translucency.

Systemic examination

A thorough examination of the patient's abdomen and respiratory system was performed. Laboratory testing, including blood tests, were conducted to rule out the presence of eosinophilia, microfilaria, lymphocytosis, and an elevated ESR.

Scrotal ultrasound was done in all cases

The purpose of the procedure was to look for changes to the testis and other scrotal tissues. The patient's preparedness for anesthesia and the procedure was evaluated by an anesthesiologist. The attending surgeon modified the surgical technique under suitable anesthesia supplied by an anesthesiologist based on the patient's condition. Notes are made regarding intraoperative observations, including the color of the fluid and any changes to the testicles or epididymal issues. Depending on the clinical circumstances, a corrugated rubber drain was inserted in most cases and removed after 48 to 72 hours. Postoperative scrotal support was given in each instance. A biochemical study of the fluid and a histological examination of the samples were performed in relevant situations. It was observed how issues including infection, hematoma, scrotal edema, and fever were treated after surgery. At the time of discharge, all patients were advised to see the outpatient department for follow-up care and were told about the disease. Eventually, a follow-up study lasted one to four months [20].

Statistic evaluation

The gathered information was arranged and entered into Microsoft Excel 2007, a spreadsheet program. It was then exported to the Statistical Package for Social Sciences (SPSS) data editor page. For every test, 5% and 95% were the designated levels of significance and confidence, respectively.

Results

This clinical investigation examined the distribution of different forms of scrotal cystic edema, the clinical presentation pattern, and the range of available treatment choices.

Table 1: Participants distribution as per age

Sr. No.	Age (In Years)	Percentage	Participants	P value
1.	11-20	5	5	0.01
2.	21-30	13	13	
3.	31-40	20	20	
4.	41-50	25	25	
5.	51-60	30	30	

Table 2: Various swelling cause's to scrotal swelling

Sr. No.	Number of cases	Disease
1.	74	Primary Hydrocele
2.	18	Epididymal Cyst
3.	05	Sebaceous cyst
4.	03	Spermatocele
5.	100	Total

Table 3: Various treatment approaches

Sr. No.	Number of cases	Disease
1.	08	Lords Placation
2.	06	Partial excision
3.	60	John lays procedure
4.	26	Excision
5.	100	Total

In total, 100 patients were assessed in the hospital and medical college over a two-year period. With an average age of 68 years, the oldest patient was the youngest at 18 years old. (Table 1). Thirty instances were reported in the age group of 51 to 60 years, with 25 cases in the age group of 41 to 50 years. The minimal number of instances in the 11-20 age range was five. There was a substantial statistical difference ($p < 0.05$) between the age groups.

Swelling was the main symptom in 86 cases; in 14 cases, the patient additionally reported pain and scrotal edema. Cystic swellings occurred more frequently on the right side of the scrotum-60 of the cases-than on the left. Thirty incidents in total were seen on the left side. Out of all the cases, 10 had bilateral swelling; however, one patient had numerous sebaceous cysts.

Primary vaginal hydrocele was the most common cause of cystic scrotal swellings in this study. With eighteen cases, epididymis cysts were the second most common cause. Spermatocele was seen in three cases, and numerous sebaceous cysts were present in five cases. The age range of cases of primary vaginal hydrocele was 11-20 years old to 61-70 years old. Primary vaginal hydrocele cases were most common in the age categories of 41-50 and 51-60 years, with 11 cases each, and 6 cases in the 61-70 age group. For each age range of 11 to 20 years, there was only one primary instance of vaginal hydrocele documented. Epididymal cysts

were observed in all age groups, with the exception of those in the 61-70 and 21-30 age ranges. Six cases of epididymal cysts were found in individuals between the ages of 31 and 40, and four cases each in the age categories of 41 to 50 and 51 to 60. These individuals were the ones who saw epididymal cysts the most frequently. The least amount of epididymal cyst cases occurred in the age group of 11 to 20 years. There have been four reports of spermatocele in people between the ages of 51 and 60. Two cases in the age range of 31 to 40 years were documented. People between the ages of 61 and 70 were found to have numerous sebaceous cysts. There was a substantial statistical difference ($p < 0.05$) between the age groups. Eight cases of primary vaginal hydrocele, sixty cases of sac eversion, and six cases of partial excision and sac eversion were treated using Lord's plication. 26 instances (including 2 cases of multiple sebaceous cysts requiring skin excision and primary suturing) had sebaceous cysts, spermatocele, and epididymal cysts removed. Testicles were normal in 96 patients after surgery; 4 cases had flattened testicles as a result of primary vaginal hydrocele. Inflammation of the testicles was not seen. Thirty-two patients were discharged after six to ten days, and two patients were discharged after eleven to fifteen days. Sixty-six patients were released in a range of 0 to 5 days, with the earliest discharge being from excision of sebaceous cysts. When treating primary vaginal hydrocele, patients who had Lord's surgery usually left the hospital earlier than those who had sac eversion.

Discussion

There is an increase in the scrotum area in all age groups. In all, one hundred patients took part in the current study's investigation. The age group of 51-60 years old witnessed the highest number of patients, followed by that of 41-50 years old. There are no recognized risk factors in the aforementioned cases. For most patients, the primary complaint was scrotal edema. A few patients complained of edema and discomfort in the scrotum^[21].

These complaints are similar to the one raised by Subith *et al.* in their study, where they simply mentioned swelling. When comparing the two sides for edema, the majority of patients were found to have swelling on the right side. Only ten cases were observed on both sides. The results aligned with studies carried out by Subith *et al.* (2014) and Agbakwuru *et al.* (2008). The problems were confirmed by scrotal ultrasonography. The enlargements were globular or oval in shape. Primary hydrocele was considered to be the most common cause of the scrotal enlargements. It was found that the second source of edema was epididymal cysts. Scrotal sebaceous cysts and spermatocele (6% each) were the other causes noted in the study. Agbakwuru *et al.* examined 50 patients and found a similar pattern of cystic scrotal edema, with primary vaginal hydrocele accounting for 94% and 55% of the cases, respectively. These findings align with the findings of many previous investigations.

The cystic enlargements in the scrotum were all surgically removed. The majority of patients underwent spinal anesthesia throughout the surgical operation, with only four cases undergoing general anesthesia. Only patients who were younger were given general anesthesia. Local anesthesia was used in just two of the cases. The three methods utilized to treat primary vaginal hydroceles were Jaboulay's procedure, Lord's plication, and partial excision and eversion of the sac. Jaboulay's eversion of sac was used in 60% of cases of

primary vaginal hydrocele characterized by a large, tight swelling and thin sac^[22]. Surgery was used to remove epididymal cysts and spermatoceles. For primary vaginal hydroceles, Lord's plication had no postoperative complications when compared to partial excision and eversion of the sac and Jaboulay's therapy. Because dissection of the hydrocele sac increases morbidity and oedema is caused by extensive handling and tissue dissection, the excisional method may result in increased tissue oedema, hematoma in two cases, and no infection. The separation of the hydrocele sac from the surrounding tissues causes generalized seeping, which is the main cause of the post-operative hemorrhage^[23-25]. Generalized leakage, the formation of hematoma, and infection are all avoided by Lord's plication because the cleavage between the sac and the surrounding tissue is not opened. Lord's plication is effective, safe, and reasonably priced, as evidenced by the two main vaginal hydrocele cases in this study that had problems. Only one of the 45 cases of unilateral primary vaginal hydrocele in the current study-and that one was a relatively recent occurrence-had testicular flattening. There was not any atrophy of the testicles.

Conclusion

A cystic enlargement of the scrotum is a common issue that requires surgical attention. The most prevalent form of cystic swelling of the scrotum was known as primary vaginal hydrocele. The majority of the cystic swellings were successfully addressed by surgical procedures. The treatment performed by Lord had the fewest complications when it was completed.

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