



## Demographics of scrotal swellings in a tertiary care centre

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### ABSTRACT

**Objective:** To understand the demographics of scrotal swellings encountered in the surgical OPD in a tertiary care centre and to appropriately diagnose and treat the same.

**Material and methods:** This is a prospective study, which included 100 cases with scrotal swellings presenting to surgical OPDs in Bowring and Lady Curzon Hospital, attached to Bangalore medical College and research Institute, Bangalore from December 2022 to August 2023

**Results:** Scrotal swellings formed 2.8% of all complaints of patients attending surgical OPDs in our setup. Scrotal swellings were common in the second and third decade of life. The most common presenting complaint was swelling of scrotum. Other symptoms included pain (40%), fever (30%) and abdominal mass (5%). Scrotal swellings, if unilateral were more common on the left side. Eight cases of Fournier's gangrene were seen. There were 15 out of 100 cases were of epididymorchitis. There were 6 cases of testicular malignancy and were treated with high inguinal orchidectomy. Four cases turned out to be seminoma. Jabouley's was the most common procedure performed in 40 cases.

**Conclusion:** Scrotal swellings are common patient concerns which require good history taking, good clinical acumen for examination and appropriate diagnostic investigations to treat adequately. Clinical diagnosis should be given utmost importance and investigations are only done to confirm the diagnosis. Treatment should be prompt to prevent complications and preserve fertility of the patient. Negative expiration rates are better than missing critical diagnosis.

**Keywords:** Hydrocele, Epididymorchitis, Jabouley's procedure, testicular torsion, testicular carcinoma.

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### INTRODUCTION

Scrotal swellings are common conditions encountered in day to day surgical OPDs. Due to poverty, hesitation and lack of awareness, even though the scrotum is in an accessible location, patients suffer for long duration before approaching the surgeon. As a result of the delayed presentation, they're often diagnosed with advanced conditions. Diagnosis and treatment of the same should be prompt to prevent further worsening of the condition and before complications arise.

The etiologies of scrotal swellings vary from acute infective conditions to chronically presenting malignant tumors. Scrotal swellings can be painful or painless. It is important for the surgeon to be aware of the surgical anatomy and pathophysiology to appropriately diagnose the condition. Careful history taking and physical examination are paramount for

arriving at a differential diagnosis. Investigations such as ultrasonography and color Doppler help in confirming the clinical suspicions and further consolidating into a single diagnosis and treating appropriately<sup>(2)</sup>.

## METHODOLOGY

This is a prospective study, which included 100 cases with scrotal swellings presenting to surgical OPDs in Bowring and Lady Curzon Hospital, attached to Bangalore medical College and research Institute, Bangalore from December 2022 to August 2023

### Inclusion criteria

Any patient above 18 years of age, giving valid consent  
Patient presented with scrotal swelling to the surgical OPD.

### Exclusion criteria

Any patient below 18 years of age  
Female patients  
Any patient not giving consent

## HISTORY

To appropriately evaluate any patient, it is important to elicit history regarding mode of onset, duration of symptoms, progression, association with fever, pain, previous history of trauma, aggravating and relieving factors as well as associated systemic symptoms.

## PHYSICAL EXAMINATION

Physical examination of the patient should not be confined to examining the scrotum, but should include systemic examination with thorough knowledge of the pathophysiology of the suspected etiology<sup>(1)</sup>. Informed consent is mandatory prior to examination of the patient.





### INVESTIGATIONS

Ultrasonography forms the investigation of choice to diagnose scrotal swellings<sup>(3)</sup>. It helps detect the origin of the swelling, be it the testis, testicular appendages or its coverings. It helps diagnose extra testicular swellings such as hydrocoele, spermatocele, and varicocele. Swellings originating from the testis can be differentiated based their appearance on ultrasonography. Testicular carcinoma has a heterogeneous appearance while an epididymo-orchitis presents with a homogenous appearance. Addition of a colour Doppler and B-mode ultrasound can help assess blood flow to the testis<sup>(4)</sup>. It is increased in infective conditions and decreased in testicular torsion<sup>(5)</sup>. For testicular torsion the sensitivity of Doppler ultrasound is 86 to 88% and the specificity is 90% to 100%<sup>(6)(7)</sup>.

Further evaluation is necessary depending on the diagnosis. Infective conditions need blood work to determine the extent of the infection. Malignant conditions need staging investigations and metastatic workup. Tumor markers play a pivotal role not only in diagnosing the type of malignancy but in prognosis as well as follow up of the patient post treatment<sup>(8)</sup>.

### TREATMENT

Benign conditions such as epididymo-orchitis require conservative management with appropriate antibiotics and analgesics. Conditions such as hydrocoele, spermatocele and epididymal cysts require surgical exploration after pre-operative optimization of the patient. Testicular torsion forms a surgical emergency which requires prompt exploration and detorsion followed by fixation. If treatment is delayed, the only option available would be orchidectomy. Testicular malignancies must be further evaluated with a CECT abdomen and pelvis to further stage the disease<sup>(9)</sup>. Treatment must be catered to the stage of the disease.





## RESULTS

1. Scrotal swellings formed 2.8% of all complaints of patients attending surgical OPDs in our setup.
2. Scrotal swellings were common in the second and third decade of life. Hence were more common in the young male.
3. Most of the patients in this study belong to agricultural class(45%) followed by daily wage laborers(32%), students(15%) and software employees(5%).
4. The most common presenting complaint was swelling of scrotum. Other symptoms included pain(40%), fever (30%) and abdominal mass (5%).
5. The duration of symptoms varied from six hours to 2 years. Majority of the patients presented within three months of symptoms.
6. No etiology was detected in about 14 cases. Primary unilateral hydrocoele(40) formed the most common diagnosis in about 32 cases. Scrotal swellings, if unilateral were more common on the left side.
7. Appropriate Surgical intervention was carried out in 70 cases and the rest were treated conservatively with antibiotics and analgesics.
8. Jabouley's was the most common procedure performed in 40 cases. Most common complication was haematoma in 10 cases followed by infection in five cases. Hematoma was treated with watchful waiting and infections were treated with appropriate antibiotics.
9. Eight cases of forniers gangrene were seen. All of the patients had comorbidities such as diabetes mellitus and three of them had a history of trivial trauma. These cases were treated with extensive debridement and culture specific antibiotics.
10. There were 15 cases of epididymorchitis,12 of which were acute and 3 were chronic secondary to tuberculosis. These patients were treated with appropriate antibiotics and antitubercular treatment respectively.
11. There were six cases of testicular malignancy. After appropriate staging investigations, they were treated with high inguinal orchidectomy and subjected to histopathology. Four cases turned out to be seminoma and two were diagnosed to have non-seminomatous germ-cell tumours.
12. There were no deaths seen in this study.

## FOLLOW-UP

Loss to follow-up was quite high especially after two months. The longest follow-up in this study was that of a patient with seminoma where the patient received adjuvant chemotherapy.

## DISCUSSION

### SCROTAL SKIN

Scrotal skin can be affected by various etiologies ranging from a benign sebaceous cyst to malignant squamous cell carcinoma<sup>(8)</sup>.

Sebaceous cyst is the most common condition to affect the scrotal skin because of its abundant sweat glands and hair follicles. The scrotum is rich in Sebaceous glands which can become infected and obstructed leading to sebaceous cyst. It presents as slow-growing painless nodules over the hair follicle bearing scrotal skin. Excision is the only treatment required.

Squamous cell carcinoma is the most common primary malignancy seen in the scrotal skin. It is thought to be associated with certain occupations such as chimney sweeps. Industrial carcinogens and PUVA are also thought to play a role.

### TUNICA VAGINALIS AND PROCESSUS VAGINALIS

Hydrocoele is the most common cause of scrotal swelling occurring in all ages<sup>(11)</sup> Hydrocoele is defined as the collection of cholesterol rich fluid within the tunica albuginea or anywhere in the processus vaginalis. It is painless and can attain a very large size before the patient presents to the hospital. It is most commonly seen in middle ages but it is not uncommon in childhood. Transillumination is found to be positive unless the collection is infected. Surgery forms the mainstay of treatment. Three procedures can be done, namely Jabouley's, lords plication, and excision of sac.

### TESTIS

Testicular tumours are the most common malignant tumours encountered in men between 25 to 35 years<sup>(12)</sup>. Most palpable testicular tumours are malignant<sup>(13)</sup>. An enlarged, non-tender testis with firm consistency which does not transilluminate is considered as a malignancy unless proven otherwise<sup>(14)</sup>.

Testicular torsion occurs most commonly in teenage between 10 to 25 years of age<sup>(15)</sup>. It typically presents with sudden onset, painful, testicular enlargement<sup>(16)</sup>. The testis is swollen, painful and present high in the scrotum<sup>(17)</sup>. Elevation of the testis aggravates pain and cremasteric reflex is absent<sup>(18)</sup>. If orchidopexy is performed within six hours, salvage rate is as high as 90% but it drops down to 10% in 24 hours<sup>(19)</sup>. Contralateral orchidopexy is important in these situations due to congenital abnormalities' in testicular attachments being bilateral<sup>(20)(21)</sup>.

Testicular infection, namely, orchitis can be an ascending infection through the vas or a haematogenous infection through the bloodstream. It presents with prodromal symptoms such as fever and malaise. Elevation of the testis relieves pain and this can be used to differentiate it from testicular torsion<sup>(22)</sup>. Treatment consists of appropriate antibiotics and analgesics.

### EPIDIDYMIS

Epididymis is commonly infected in orchitis due to its close approximation to the testis<sup>(23)</sup>. Urinary tract infections, as well as sexually transmitted diseases can both infect the epididymis. Acute painful tender epididymis is palpable separately from the testis in epididymitis.

Spermatocele is a retention cyst of the epididymis which presents as a soft, nodule near the head of the epididymis. Swelling is distinct from the testis and present above and behind the testis and does not transilluminate. Treatment would include watchful waiting as it subsides with time.

Systemic illnesses such as congestive cardiac failure, chronic liver disease, chronic kidney disease and hypoproteinaemia can also present with scrotal swelling due to dependent edema. Treatment of these involves the treatment of the systemic illness.

Elephantiasis of the scrotum can occur due to infection by wucherariabancrofti. It commonly occurs in tropical countries. It also presents with scrotal swelling and probable swelling of bilateral lower limbs.

Fourniers gangrene is defined as obliterative endarteritis with polymicrobial infection. Treatment consists of extensive debridement and culture sensitive antibiotics. Testis is spared in Fournier's gangrene.

## CONCLUSION

Scrotal swellings are common patient concerns which require good history taking, good clinical acumen for examination and appropriate diagnostic investigations to treat adequately. Clinical diagnosis should be given utmost importance and investigations are only done to confirm the diagnosis. Treatment should be prompt to prevent complications and preserve fertility of the patient. Negative expiration rates are better than missing critical diagnosis.

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