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Analysis of Scrotal Swelling in Government Erode Medical College Hospital

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Abstract:
Aim: *The aim of this study is to analyze the various causes for scrotal swelling and their pattern of incidence in Government Erode Medical College Hospital, Perundurai, to study the increased incidence of varicocele which is one of the most common surgically correctable cause of male infertility and to study relationship between various scrotal swellings and male infertility.*
Materials and Methods: *The present study is a prospective study consisting of 60 cases with scrotal swellings admitted in Government Erode Medical College Hospital, Perundurai, during the study period of 12 months from January 2021 to December 2021. 60 cases with scrotal swelling were selected randomly with the inclusion criteria of age more than 12 years, unilateral or bilateral scrotal swellings and the scrotal swellings with or without history of infertility. Patients with age less than 12 years and those with scrotal swellings due to complete inguinal hernia or Fournier gangrene are excluded from the study. Patient admitted were evaluated by obtaining a complete history and the predisposing factors were assessed through questionnaires. Infertility history were elicited for all married patients. For all patients ultra sound and Doppler were done. Treatment was divided into either conservative or surgical management. Data were collected in excel and analyzed using SPSS v23.*
Results: *In our study the most common cause of scrotal swelling was epididymo-orchitis accounting for 26.7% of the total cases followed by hydrocele and varicocele accounting to about 21.7% and 20 % respectively. Hematocele, torsion testis, spermatocele, pyocele and testicular tumors were the other causes of scrotal swellings observed in this study. The highest incidence of scrotal swelling in our study occurred between the age group of 31-40 years and the majority were manual Laboure's by occupation (68.3%). The duration of symptoms varied with the shortest duration of symptoms being 12 hours (Torsion testis) and the longest duration was 353days(varicocele). In our study, the majority of the scrotal swellings were distributed more on the right side (53.3%) than on the left side (40%) and 6.7% of cases had bilateral involvement. Most of the varicocele and torsion testis were on left side and most of the hydrocele and epididymo-orchitis had a right-side predominance. Out of 60 patients studied, the most common symptom was pain noted in 51.7 % of cases followed by painless swelling of the testis noted in 48.3 % of cases. In majority of cases, the predisposing factors were idiopathic (68.3%) followed by trauma (8.3%). Out of 60 patients in our study, 47 patients were married out of which 5 patients had a history of infertility. Among the 5 infertile patients, 4 patients had varicocele and 1 had recurrent epididymo-orchitis. In this study population of 60 patients, 25 patients (41.7%) were managed conservatively and 35 patients (58.3%) underwent surgical management.*
Conclusion: *In our study among 60 patients, the most common age group with scrotal swelling was between 31-40 years with the most common cause being epididymo-orchitis. Most of the scrotal swelling had a right sided preponderance than left except varicocele and torsion testis. The most common presenting symptom was testicular pain followed by painless swelling of testis. Majority of the cases were idiopathic and only 8% of scrotal swelling were associated with infertility of which varicocele was the most common cause. Routine investigations like hemogram, urine analysis were not very much conclusive. Radiological investigations like Ultrasonogram and color doppler were useful to reach an accurate diagnosis. Most of the scrotal swelling in our study were treated surgically.*
Key word: *Scrotal swelling, Varicocele, Infertility.*

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I. Introduction

Scrotal swellings are one of the most common presenting symptoms in the surgical out patient department. The etiology of scrotal swellings very much changed in last 10 to 20 years where hydrocele which was the most common etiology in the past was replaced by epididymo-orchitis. Also, varicocele cases significantly increased in the last 10 years and is one of the most common surgically correctable causes of male

infertility. Among the acute scrotal conditions, torsion testis is by far the most significant. Numerous acute scrotal conditions may present in a similar way as torsion testis such as epididymo-orchitis, haematocele, testicular trauma and strangulated inguinal hernia. The diseases whose primary located elsewhere such as meconium peritonitis and hemoperitoneum can present with symptoms and sign in the scrotum. Similarly, a testicular torsion can present with nausea, vomiting and abdominal pain. This infers that scrotum cannot be seen as an area isolated from rest parts of the body. In most of the cases, it should be possible to arrive at a reasonably accurate diagnosis based on detailed history and clinical examination with the proper usage of imaging studies. Despite all the investigations, most of which are available in only some centers in India, early exploration of scrotum remains to be one of the most predominant diagnostic as well as therapeutic modality in remote areas.

II. Materials And Methods

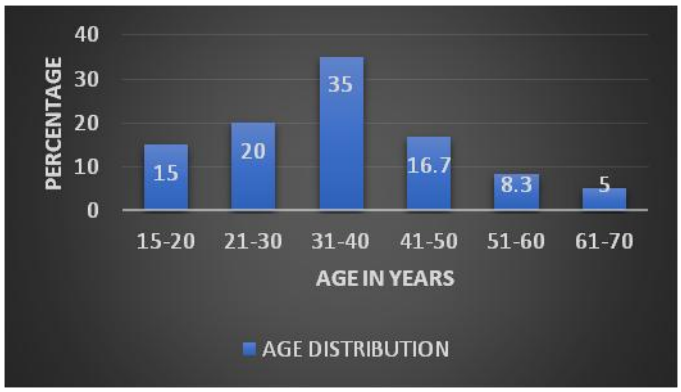
STUDY AREA:
Government Erode Medical College Hospital (GEMCH), Perundurai, Tamil Nadu.
STUDY POPULATION:
Patients admitted in GEMCH with clinical features of scrotal swellings.
STUDY PERIOD:
January 2021 to December 2021 (1 year)
INCLUSION CRITERIA:
1. All patients admitted in Government Erode Medical College Hospital (GEMCH), Perundurai with clinical features of scrotal swellings.
2. Age more than 12 years.
3. Scrotal swelling - Unilateral or bilateral.
4. Scrotal swelling with or without history of infertility.

EXCLUSION CRITERIA:
1. Age less than 12 years.
2. Patients with scrotal swelling due to complete inguinal hernia and Fournier's gangrene.

SAMPLE SIZE:
Sixty patients.
STUDY DESIGN:
A Prospective study including all patients eligible by inclusion and exclusion criteria.
Institutional ethical clearance has been obtained and adhered.
METHOD:
Patients who satisfy the inclusion and exclusion criteria were admitted and evaluated by obtaining a complete history. The predisposing factors were assessed through questionnaires. Infertility history were elicited for all married patients. For all patients ultra sound and Doppler evaluation of scrotum were done. Treatment was divided into either conservative or surgical management. Data were collected in excel and analyzed using SPSS v23.

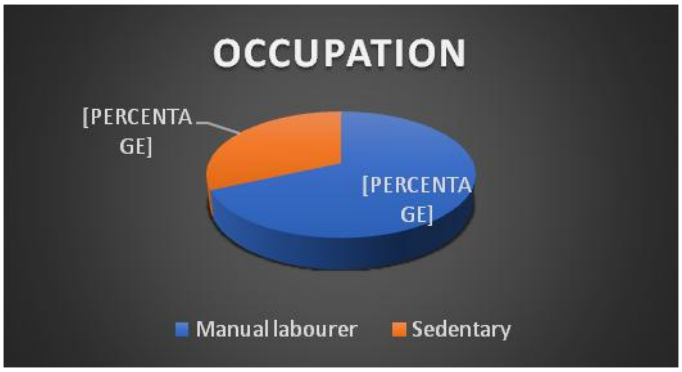
III. Result:

Age Distribution: The overall incidence of age is shown in the table. The maximum incidence of scrotal swelling occurred between the group of 31-40 years of age followed by the group of 21-30 years of age. Our study showed the incidence of age for epididymo-orchitis was maximum in the age group of 21-30. In our study 9 patients were between 15-20 years of age. Only 3 patients was found to be more than 60 years of age.



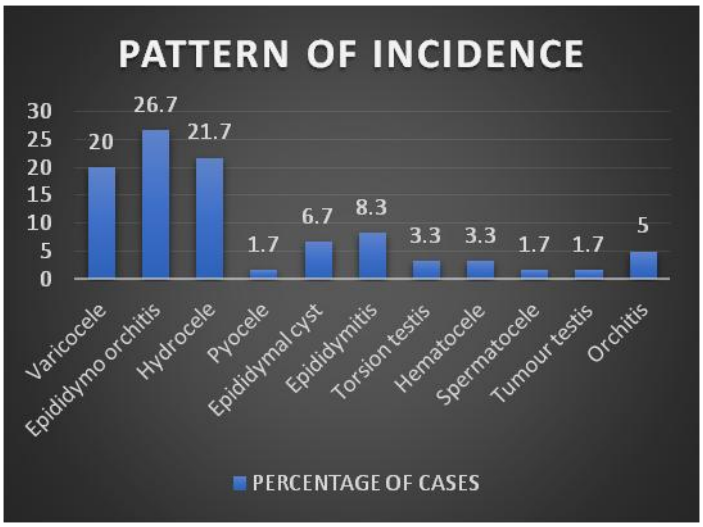
AGE (YEARS)	NUMBER OF CASES	PERCENTAGE
15-20	9	15.0
21-30	12	20.0
31-40	21	35.0
41-50	10	16.7
51-60	5	8.3
61-70	3	5.0
TOTAL	60	100.0

Occupation Distribution: In our study series of 60 cases, 68.3% of cases were manual Laboure's. Only 31.7% of cases were sedentary workers such as clerks, students etc.



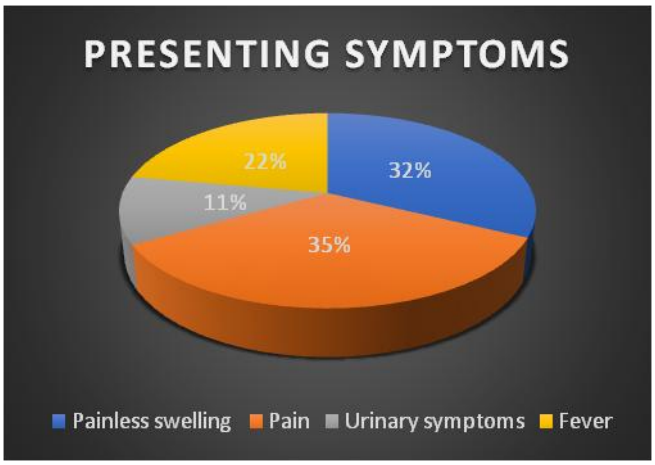
OCCUPATION	NUMBER OF CASES	PERCENTAGE
Manual labourer	41	68.3
Sedentary	19	31.7
TOTAL	60	100.0

Pattern of Incidence: In our study most common cause of scrotal swelling was epididymo-orchitis (16 cases) which accounts for 26.7% of total cases. Second most common cause scrotal swelling in our study was hydrocele(13cases) which accounts for 21.7 % of total cases. Third most common cause was varicocele (12 cases) which accounts for 20% of total cases followed by epididymitis, orchitis, epididymal cyst. Hematocele and torsion testis accounts for total of 4 cases. Spermatocele, pyocele, tumor testis found to be least presentation



DIAGNOSIS	NUMBER OF CASES	PERCENTAGE
Varicocele	12	20.0
Epididymo orchitis	16	26.7
Hydrocele	13	21.7
Pyocele	1	1.7
Epididymal cyst	4	6.7
Epididymitis	5	8.3
Torsion testis	2	3.3
Hematocele	2	3.3
Spermatocele	1	1.7
Tumour testis	1	1.7
Orchitis	3	5.0
TOTAL	60	100.0

Presenting Symptoms: Out of 60 patients studied most common symptom was pain which is present in 51.7 % of cases. Painless swelling was presented in 48.3 % of cases. Followed by fever was presented in 33.3 % of cases. Urinary symptoms presented in 16.7% of cases.

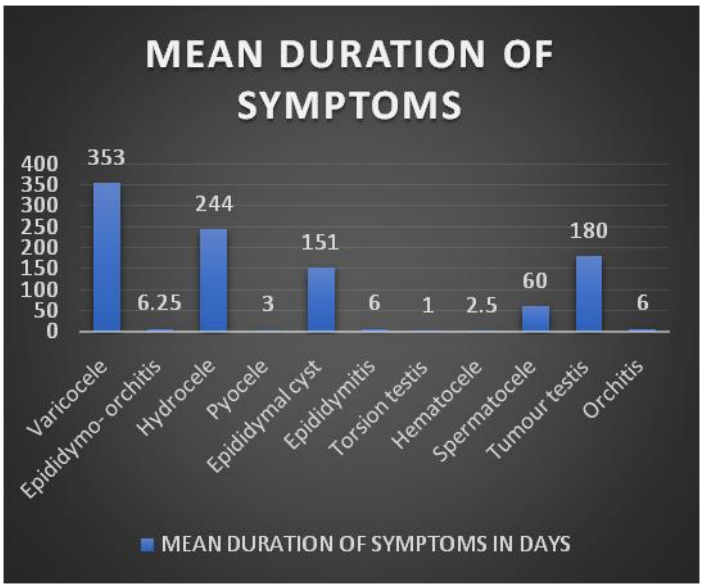


SYMPTOMS	NUMBER OF CASES	PERCENTAGE
Painless swelling	29	48.3
Pain	31	51.7
Urinary symptoms	10	16.7
Fever	20	33.3

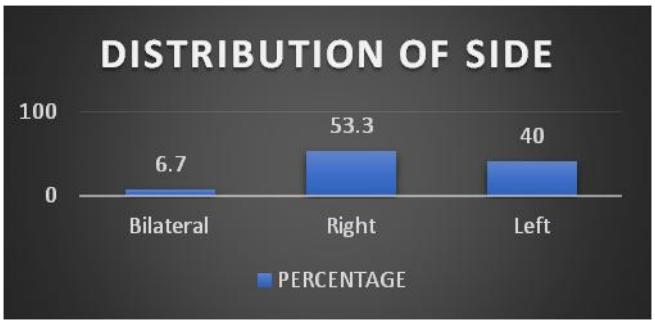
Mean Duration of Symptom: The duration of symptoms varied from few hours to some days. The shortest duration of symptoms detected by this study was 12 hours (Torsion testis) and longest duration was 353days(varicocele). The average duration of symptom in epididymo-orchitis was 6.25 days. The average duration of symptom in torsion testis was 1 day.

DIAGNOSIS	NUMBER OF CASES	MEAN DURATION OF SYMPTOM (DAYS)
Varicocele	12	353
Epididymo- orchitis	16	6.25
Hydrocele	13	244
Pyocele	1	3
Epididymal cyst	4	151
Epididymitis	5	6
Torsion testis	2	1
Hematocele	2	2.5
Spermatocele	1	60
Tumour testis	1	180

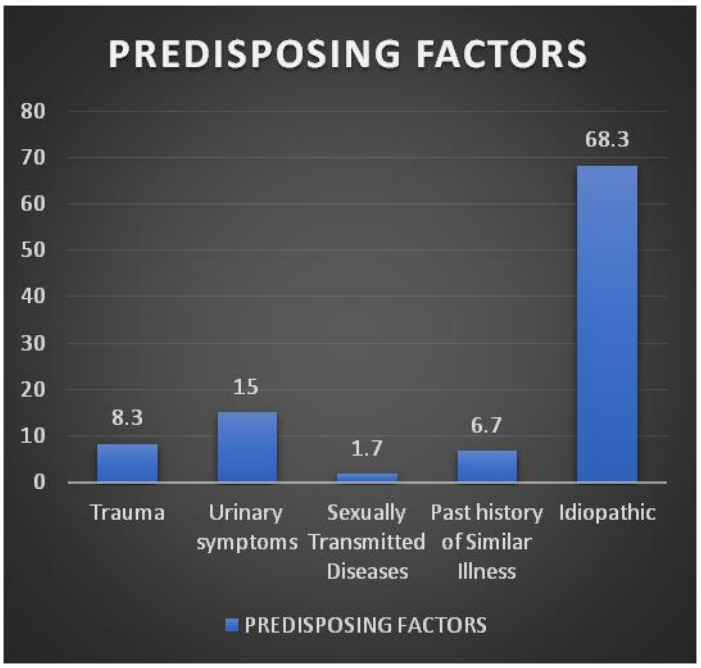
Orchitis	3	6
Total	60	-



***Distribution of side*:** In our study, it was detected that the scrotal swelling was distributed more on the right side (53.3%) than on the left side (40%). 6.7% of cases had bilateral involvement. Also, most of the varicocele and torsion testis occurred on the left side and most of the hydrocele and epididymo-orchitis had a right-side predominance.



SIDE	NUMBER OF CASES	PERCENTAGE
Bilateral	4	6.7
Right	32	53.3
Left	24	40.0
TOTAL	60	100.0

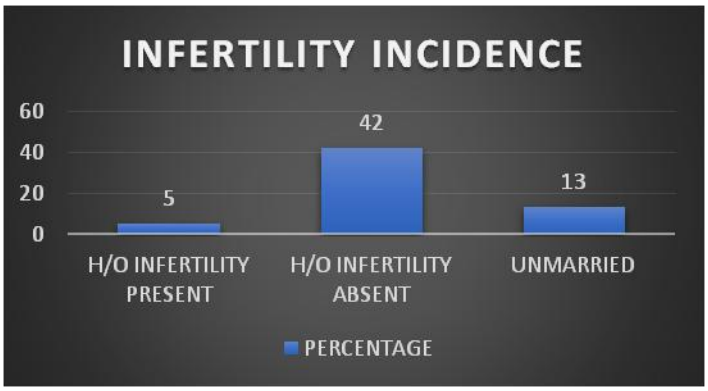


***Predisposing Factors*:** In this study, history of trauma was present in 2 cases of haematocele, 1 case of testicular torsion ,1 case of pyocele and 1 case of epididymal cyst. History of similar complaints in the past was found in 4 cases of epididymo-orchitis. Urinary symptoms were present 9 cases of epididymo-orchitis. One case of syphilitic orchitis was present. But in majority of cases predisposing factors could not be made out (idiopathic). Totally 41 cases found to be idiopathic.

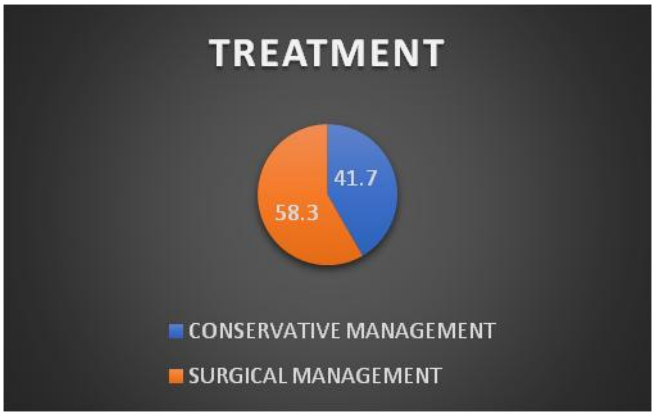
PREDISPOSING FACTORS	NUMBER OF CASES	PERCENTAGE
Trauma	5	8.3
Urinary symptoms	9	15.0
Sexually Transmitted Diseases	1	1.7
Past history of Similar Illness	4	6.7
Idiopathic	41	68.3
TOTAL	60	100.0

Infertility incidence: Out of 60 patients 13 patients were unmarried. In remaining 47 married patients 5 patients had a history of infertility. Out of 5 infertile patients 4 patients were associated with diagnosis of varicocele, 1 patient associated with diagnosis of recurrent epididymo-orchitis.

HISTORY OF INFERTILITY	NUMBER OF CASES	PERCENTAGE
Yes	5	8.3
No	42	70.0
Unmarried	13	21.7
TOTAL	60	100.0



Treatment: In this series of 60 cases, 25 cases were managed conservatively which includes 15 cases of epididymo-orchitis, 5 cases of epididymitis ,3 cases of orchitis and 2 cases of epididymal cyst. 35 cases underwent surgical management which includes 13 cases of hydrocele, 12 cases of varicocele, 2 cases of epididymal cyst, 2 cases of hematocele, 2 cases of testicular torsion, 1 case of pyocele, 1 case of testicular abscess, 1 case of spermatocele and 1 case of testicular tumor.



TREATMENT	NUMBER OF CASES	PERCENTAGE
Conservative	25	41.7
Surgical	35	58.3
TOTAL	60	100.0

IV.Discussion

In our study the most common cause of scrotal swelling was epididymo-orchitis accounting for 26.7% of the total cases followed by hydrocele and varicocele accounting to about 21.7% and 20 % respectively. Hematocele, torsion testis, spermatocele, pyocele and testicular tumors were the other causes of scrotal swellings observed in this study. The highest incidence of scrotal swelling in our study occurred between the age group of 31-40 years and the majority were manual Laboure's by occupation (68.3%). The duration of symptoms varied with the shortest duration of symptoms being 12 hours (Torsion testis) and the longest duration was 353days(varicocele). In our study, the majority of the scrotal swellings were distributed more on the right side (53.3%) than on the left side (40%) and 6.7% of cases had bilateral involvement. Most of the varicocele and torsion testis were on left side and most of the hydrocele and epididymo-orchitis had a right-side predominance. Out of 60 patients studied, the most common symptom was pain noted in 51.7 % of cases followed by painless swelling of the testis noted in 48.3 % of cases. In majority of cases, the predisposing factors were idiopathic (68.3%) followed by trauma (8.3%). Out of 60 patients in our study, 47 patients were married out of which 5 patients had a history of infertility. Among 5 infertile patients, 4 patients had varicocele and 1 had recurrent epididymis-orchitis. In this study population of 60 patients, 25 patients (41.7%) were managed conservatively and 35 patients (58.3%) underwent surgical management.

V. Conclusion

In our study among 60 patients, the most common age group with scrotal swelling was between 31-40 years with the most common cause being epididymo-orchitis. Most of the scrotal swelling had a right sided preponderance than left except varicocele and torsion testis. The most common presenting symptom was testicular pain followed by painless swelling of testis. Majority of the cases were idiopathic and only 8% of scrotal swelling were associated with infertility of which varicocele was the most common cause. Routine investigations like hemogram, urine analysis were not very much conclusive. Radiological investigations like Ultrasonogram and color doppler were useful to reach an accurate diagnosis. Most of the scrotal swelling in our study were treated surgically.

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