



Comprehensive Study of Management of Undescended Testis

KEYWORDS

empty scrotum, cryptorchidism, USG, Laparoscopy, Orchiopexy.

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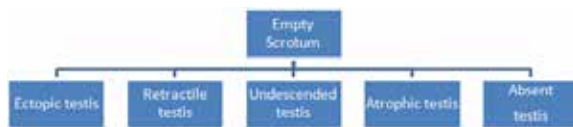
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ABSTRACT *OBJECTIVE: Comprehensive Study of Management of Undescended Testis, 50 cases comprising 63 testicular units of empty scrotum wherein retractile testes were ruled out, were studied during Feb 2009 to Jun 2011. Laparoscopy was used as the prime modality of investigation in impalpable undescended testes. Post-op follow ups were conducted at 1 week, 3, 6 months and 1 year. A prospective study of 50 cases of empty scrotum with maximum numbers of patients above 10 years and between 1 to 5 years age was conducted. 37 cases with unilateral empty scrotum and 13 cases with bilateral empty scrotum. 29 cases had clinically detectable hernia, 1 case as a swelling elsewhere in the perineum, 1 had unilateral empty scrotum with severe excruciating pain intra-operatively diagnosed as inguinal undescended testes with intravaginal torsion and 4 cases with malignancies. Empty scrotum is the most common presenting complaint. Unilateral, palpable cryptorchidism is more common than bilateral and/or non palpable cryptorchidism. Laparoscopy is the prime modality of investigation in all cases of impalpable undescended testes. Earlier the surgery, better are the chances of testicular recovery. 6 months is the ideal age for doing orchiopexy to prevent sterility and malignancy. Vasoepididymal anomalies are common with incompletely descended testes. Malignancy mostly occurs in adults and seminoma is its most common histology. Optimal management of cryptorchidism requires precise operative strategies.*

INTRODUCTION

CAUSES OF EMPTY SCROTUM



AIMS AND OBJECTIVES

- 1-To study the surgical management in undescended testes.
- 2-To study the age of presentation of patients with undescended testes.
- 3-To study the frequency of arrest of descent of testes at various sites in its normal course of descent.
- 4-To study the association of vaso-epididymal anomalies and other congenital anomalies in cases of undescended testes.
- 5-To study the Histopathological status of testes in cases that has undergone Orchiectomy.
- 6-To study the age of presentation of malignancy in undescended testes
- 7-To study the site of arrest of testis and its relationship with malignancy.

MATERIALS AND METHODS

SELECTION OF PATIENTS:

A study of 50 patients diagnosed with undescended testes of all age groups during the time period of Feb 2009 to Jun2011.

INVESTIGATIONS:

- 1-Thorough physical examination with detailed history taking, examination of the testicular position in the cross-legged position. Routine pre-operative check up
 - 2-Ultrasonogram.
 - 3-Laparoscopy
 - 4-Procedure followed-
- Intraoperative findings were noted Complications occurring during intraoperative and post operative period were noted.

All the cases were followed up at 1week/3 months /6 months/1 year.

A management algorithm for palpable and nonpalpable testes was created and tested in the study.

- 2] Ultrasonography
- 3] CT scan, if necessary.

INCLUSION CRITERIA

All cases of empty scrotum, unilateral and bilateral of all age groups.

EXCLUSION CRITERIA

- 1) Retractable testes.
- 2) Cases which could not be followed up for 3 months at least, were excluded from the study.

DISCUSSION

PATHOPHYSIOLOGY

The etiology of abnormal descent is multifactorial-

Hormonal	Mechanical
A) GnRH	A) Gubernaculum
B) FSH LH	B) Cord (vas and vessel)
C) Testosterone	C) Epididymal
D) Dihydrotestosterone	D) Abdominal pressure
E) MIS	E) Abdominal wall growth

THE MODES OF MANAGEMENT

Two modes of management available are:

1]HORMONAL-

hCG , GnRH [LHRH] ,Buserlein.

Hormonal treatment was not used in the present study

2] Surgical

- A] Orchiopexy
- B] Orchiectomy

Depending on the site of the testes, size of the testes and age of the patient,

Methods for Orchiopexy:

- 1-Spitz method
- 2- Fowler Stephen technique - Single stage ,Two stage(laparoscopically).
- 3-Omento- testiculopexy.
- 4-Silber Kelly technique /Testicular Autotransplantation;
- 5-Orchiectomy

OBSERVATIONS

In our prospective study of 50 cases -

1. Age at presentation

We found only 5 cases between 0-1 year of age, 13 cases between 1-5 years of age, 10 cases between 5-10 years of age group, 22 cases of >10 years age group. The potential for fertility may be maximized, if an orchiopexy is done by the age of six months.

2. Presenting complaints of the patient:

37 - unilateral empty scrotum,
13 - bilateral empty scrotum
1 - swelling elsewhere in the perineum
29 - inguinal hernia where empty scrotum was discovered incidentally.
4 - malignancy. .

3. Side of empty scrotum:

13 cases were bilateral [26%], 37 [74%] cases of unilateral empty scrotum; 17 cases were of right sided empty scrotum (45.95%), 20 cases left sided empty scrotum [54.05%]

4. Frequency of Impalpable testes in cases of empty scrotum

Of 63 testicular units 39 patients i.e. 49 (78%) testicular units presented with incompletely descended palpable testes, 11 patients' i.e. 14 (22%) testicular units presented with undescended impalpable testes.

5. The frequency of arrest of testes at various sites in cases of empty scrotum:

Of 63 testicular units -44 testicular units [69.84%] were inguinal in position. 4 testicular units [6.34%] at high scrotal position; 1 case [1.58%] at ectopic position, 3 at emergent position (4.76%) and 11 (17.46%) testicular units were intraabdominal.

7. Association of inguinal hernia with undescended testes:

Clinically detectable hernia in 29 cases (58%)

8. Various operative procedures of orchiopexy done in cases of empty scrotum:

Of 63 testicular units, 43 cases underwent Spitz method of Orchiopexy, 2 cases Lap Orchiopexy, 3 cases Lap Two Stage Fowler Stephen's Procedure, 2 cases Lap Orchiectomy, and open Orchiectomy in 8, 4 cases with 5 testicular units were of malignancies whose surgeries are not discussed in this study.

9. Role of hormone treatment in cases of empty scrotum: hormonal treatment was not given to any patient.**10. Follow up size of the testes after Orchiopexy:**

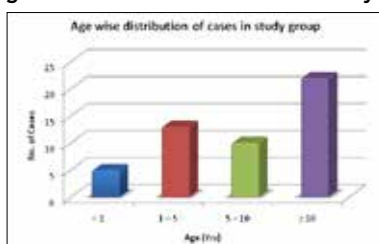
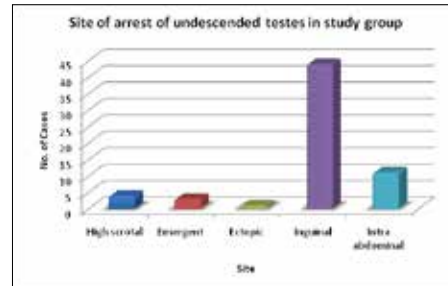
Regular follow up of the 45 testicular units for 1 year; 18 testicular units increased in size, while 25 testicular units did not show any change in size, whereas 2 testicular units showed decrease in size.

11. Malignancy

4 cases (4%) i.e. 5 testicular units presented as malignancies

12. Various types of Vaso epididymal anomalies –

vasoepididymal anomalies in 44 testicular units (75.86%) and the remaining 14 testicular units showed apparently normal vas and epididymis.

Table 1. Age wise distribution of cases in study group**Table 2: site of arrest of undescended testes****Table 3- surgical methods used**

Type of Surgery	No of testicular units	Percentage (n=63)
Spitz method of orchiopexy	43	68.25
Lap Orchiopexy	2	3.17
Lap Two Stage Fowler Stephen's Procedure	3	4.76
Lap Orchiectomy	2	3.17
Open Orchiectomy	8	12.69
Others (malignancy)	5	7.93

CONCLUSION

Careful physical examination of the baby at birth, regular follow-up of the infant and advice for early corrective surgery in cases of persistent undescended testis will go a long way in reducing the morbidity and mortality due to cryptorchidism.

Untreated intraabdominal cryptorchidism is more likely to develop malignancy than more distal cryptorchidism, and the higher the position of the undescended testis, the greater the risk for development of a malignancy.

Orchiopexy done in all the cases of empty scrotum above one year of age does not guarantee fertility, even in cases of unilateral empty scrotum where orchiopexy is done after one year of age, the fertility cannot be assured.

SUMMARY –

- 6 months is considered to be the ideal age for doing orchiopexy. Most patients present later than 6 months of age in our society.
- Empty scrotum is the most common presenting complaint of the patient.
- Unilateral empty scrotum is more common than bilateral empty scrotum.
- In our study, left unilateral empty scrotum was more common than right unilateral empty scrotum.
- Palpable incompletely descended testes are more common than impalpable incompletely descended testes.
- Most common site of arrest of descent of testes in cases of empty scrotum is the inguinal canal.
- Laparoscopy is the prime modality of investigation in all cases of impalpable incompletely descended testes. Although USG was used as an investigation modality to diagnose any other associated congenital anomalies.
- Vaso epididymal anomalies are common with incompletely descended testes
- Earlier the surgery, better are the chances of testicular recovery, and if orchiopexy is done before the age of 1 year the testis size increases in all the cases.
- Malignancy in untreated cryptorchidism is most likely to occur in adult age group.
- Untreated intraabdominal cryptorchidism is more likely to develop malignancy than more distal cryptorchidism, and the higher the position of the undescended testis, the greater the risk for development of a malignancy.
- The most common tumor that develops from a cryptorchid testis is seminoma.
- In our study the strategies we applied and the algorithm established for the management of empty scrotum were found to be successful in minimizing the complications.

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