

## Polyorchidism: Detected Due to Torsion - A Case Presentation with Review of Literature

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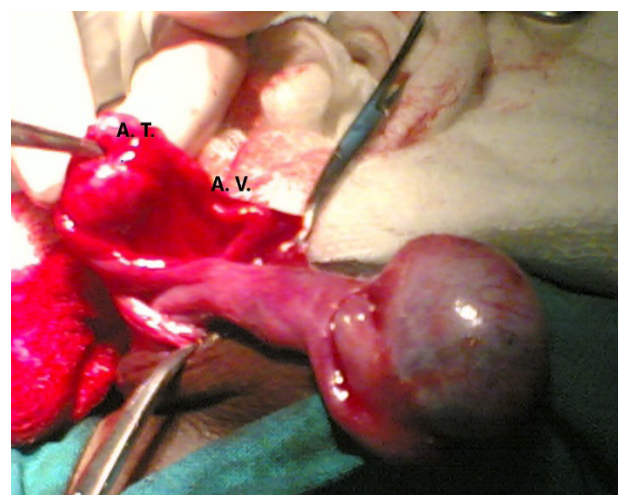
### Abstract

Polyorchidism is a rare anomaly with <200 cases reported in English literature till date [1-3]. Polyorchidism is usually asymptomatic and diagnosed when complication of torsion occurs [4]. It is many times associated with other abnormalities - inguinal hernia, hydrocele, non-descent of testis etc. It is diagnosed by sonography. The current opinion is for conservation of the supernumerary /accessory testis and regular follow up with imaging and biopsy. However, if the vascularity of the accessory testis is compromised then orchidectomy is indicated.

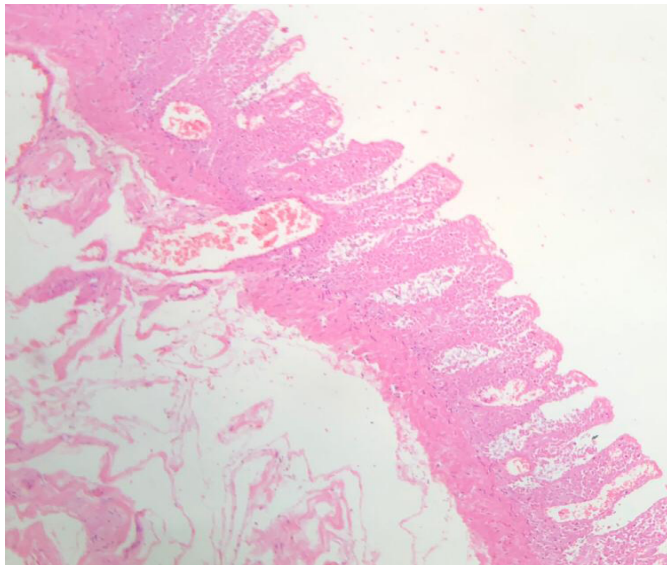
**Keywords:** Polyorchidism; Testicular torsion; Triorchidism

### Case Report

SPSY a male aged 18 years presented to emergency service with Complaints of severe pain in scrotum radiating to right groin and right iliac fossa. He had no clinical signs of toxemia. On local examination he had gross swelling in right half of scrotal sac with exquisite tenderness on manipulation. Sonography done by the radiologist concluded supernumerary testis on right side with possibility of torsion. Patient was operated same evening. Exploration of scrotum revealed supernumerary testis in right scrotal sac with torsion leading to strangulation. The supernumerary testis was excised and normal testis was left in place. Supernumerary testis had separate epididymis, vas deference and vascular supply (Figures 1 and 2). Post-operative course was uneventful and patient discharged on 3<sup>rd</sup> post-operative day.



**Figure 1:** A.T. Accessory testis; A.V. Accessory vas.



**Figure 2:** Histology of Accessory testis.

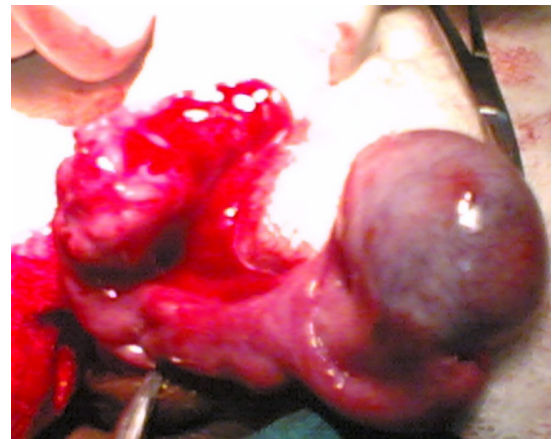
## Discussion and Review of Literature

There are different hypothesis as to the cause of polyorchidism and embryological basis is not well understood. The first theory proposed postulates longitudinal division of genital ridge resulting in duplication of testis, epididymis and vas deference. Second view suggests transverse division of the genital ridge resulting in supernumerary testis that may have a common epididymis and vas deference with the normal testis. Another hypothesis states presence of double primordial glands on both sides [5].

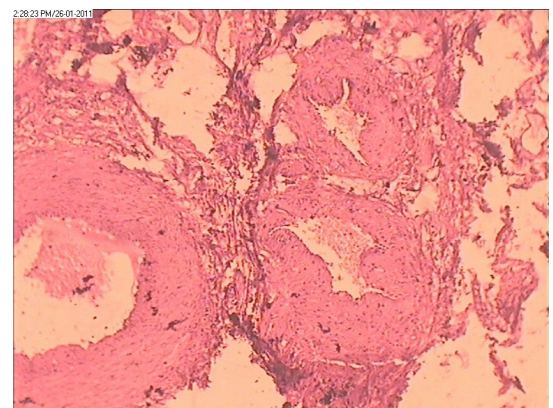
On the basis of anatomical variation Leung, A K[6] classified polyorchidism into four types -

- Type 1: The supernumerary testis lacks an epididymis and vas deference and has no connection with other testis.
- Type 2: Epididymis and vas deference is common to both testes.
- Type 3: Both testes have separate epididymis but vas deference is common.
- Type 4: The supernumerary testis has it' own epididymis and vas deference.

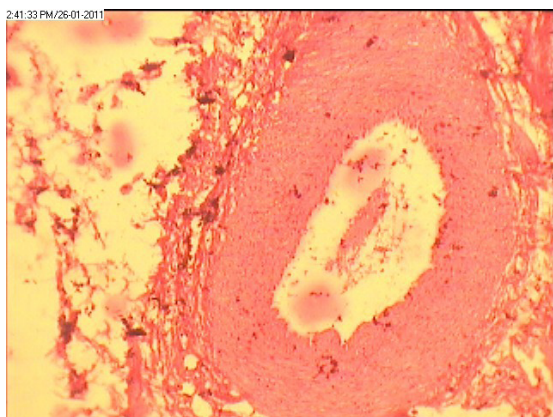
The present case falls under type 4 category in the Leung' Classification. The histology of testis revealed normal architecture (Figures 3, 4 and 5).



**Figure 3:** Deeply congested accessory testis.



**Figure 4:** Histopathology of accessory testis.



**Figure 5:** Histopathology of accessory testis.

Polyorchidism may be associated with other anomalies - inguinal hernia (24%), cryptorchidism (22%) and testicular torsion (15%). In few cases it may also be associated with varicocele, hydrocele, retractile testis, hypospadias, epididymitis or detected during investigating infertility. In a small number of cases (6.4%) malignancy may occur [7]. Diagnosis of polyorchidism in most cases is confirmed by sonographic examination; Present day modality of high frequency color Doppler sonography has an important role in the diagnosis of polyorchidism in addition it is economic [5,8]. In a retrospective study of role of high frequency color Doppler ultrasonography the reviewers reported six cases of triorchidism diagnosed by the modality; of those 5 were pathologically confirmed [4].

However, in cases of cryptorchidism, tumors or other complications MRI has been suggested by various authors [7,9,10]. A supernumerary testis found incidentally in the course of surgery should be preserved and followed up [11]. In cryptorchidism or case where malignancy is suspected or the patient is symptomatic, biopsy or orchidectomy may be required [12]. All other uncomplicated cases require a conservative approach with regular follow up sonography [7,12-15]. Most authors have recommended conservative management. Liu MH and Suraparaju L reported a case of polyorchidism and advocated conservative treatment in asymptomatic cases of supernumerary testis with negative tumor markers and radiological findings [11]. Similar conclusions were drawn by authors of 2 such case reports and further suggested that surgical exploration with biopsy was not required in those cases [10]. In cases of ectopic testis that is atrophic, there is a risk of malignancy hence orchidectomy has been suggested [16].

Our case presented due to testicular torsion in the supernumerary testicular testis. Earlier case reports of testicular torsion in a supernumerary testis have been reported in patients and one such case in a young patient has been reported [17]. In case of undescended testis, careful evaluation for abdominal supernumerary testis has been advised [18]. In another paper the authors believe that surgical exploration with orchidopexy be done for contra lateral testis – be it even normal for risk of development of torsion in future [19]. A case of polyorchidism detected due to painful testis in a 14-year male has been reported [20]. The youngest patients 3 and 5 years detected as polyorchidism on surgical exploration for ectopic testis have also been reported [21]. Most authors have recommended conservative management in form of careful long term follow up in uncomplicated case of polyorchidism with ultrasonography and Doppler studies (in case of abnormality of vascular supply), MRI in selective cases in addition tumor markers (if required). Testicular exploration and biopsy should be reserved for suspicious cases [22].

### Highlights

- Polyorchidism is a rare anomaly, many times it may remain asymptomatic.

- This anomaly is diagnosed on sonography.
- Accessory testis should be preserved, if its blood supply is intact.
- Repeated follow up are required in patients with accessory testis to detect any complication at the outset.

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