


CASE REPORT

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# Transverse testicular ectopia with inguinal hernia in an adult—a case report

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## Abstract

**Background:** Transverse testicular ectopia (TTE) is a rare congenital anomaly in which both the testis are in the same hemiscrotum or one testis in the inguinal canal of the same side. It is usually associated with other anomalies such as inguinal hernia, persistent Mullerian duct syndrome (PMDS), true hermaphroditism, and pseudo-hermaphroditism. In this case report, we present a rare case of TTE in an adult patient with fused vas deferens, aplastic right seminal vesicle, and right side inguinal hernia.

**Case presentation:** A 33-year-old male came with complaint of severe pain in the scrotum for 2 days with a long-standing history of right inguinoscrotal swelling. Clinical examination revealed a right inguinoscrotal swelling in which right testis was not palpable separately and left testis was palpable at periphery of the left hemiscrotum. Ultrasound imaging and MRI of the scrotum revealed TTE with both testes in the left hemiscrotum, fused vas deferens, right aplastic and left hypoplastic seminal vesicle, right side patent process vaginalis with a non-obstructive, and non-strangulated inguinal hernia. Surgical intervention with transeptal orchidopexy was advised but not performed due to the patient's unwillingness. Hence, we recommended an annual follow-up for the same.

**Conclusion:** The present case report emphasizes that though TTE is a rare congenital anomaly, it should be considered as a differential diagnosis in patients with an absent testis and/or infertility, and a detailed imaging and biochemical investigation should be employed considering the wide spectrum of associated conditions.

**Keywords:** Absent testis, Undescended testis, Transverse testicular ectopia, Crossed testicular ectopia, Transeptal orchidopexy

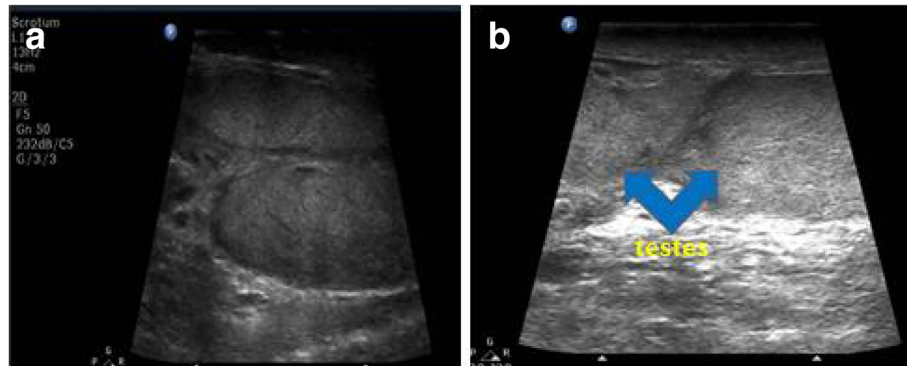
## Background

Transverse testicular ectopia (TTE)/crossed testicular ectopia (CTE) is also named testicular pseudo duplication, unilateral double testis, and transverse aberrant testicular mal-descent. It is a rare congenital anomaly where both testes descend through a single inguinal canal and are present in same hemiscrotum [1, 2]. It is usually found in patients operated for inguinal hernia or undescended testis. In this case report, we present a rare case of TTE in an adult patient with fused vas deferens, aplastic right seminal vesicle, and right side inguinal hernia.

## Case presentation

A 33-year-old male presented to the emergency department with severe pain in the scrotum for 2 days with 3 episodes of vomiting. He also had long-standing history of right inguinoscrotal swelling. General physical examination was unremarkable. On local examination, there was a right side inguinoscrotal swelling, could not be able to palpate above the swelling, cough impulse was absent, the swelling was not reducible and right testis was not palpable separately, and left testis was palpable at periphery of the left hemiscrotum. Routine blood investigation, chest radiograph, and ECG were normal. Following which the patient was referred to the Radiology Department for a scrotal ultrasonogram (Fig. 1), which shows two testes in the left hemiscrotum one

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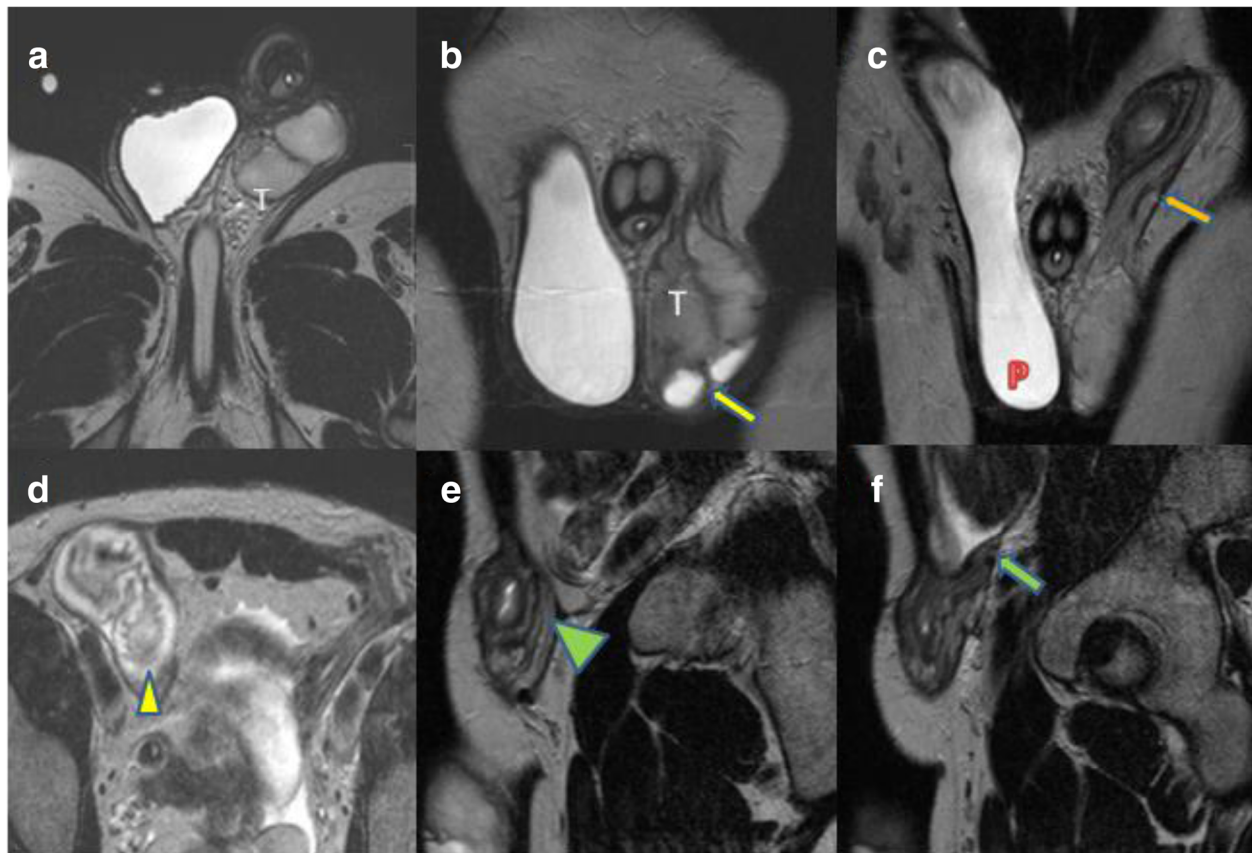


**Fig. 1** Transverse (a) and sagittal (b) ultrasound image depicting two testes in the same left hemiscrotum

above the other with normal volume and vascularity on color Doppler with varicocele. Left inguinal canal was dilated, and the fluid was filled with two separate spermatic cord structures which are fused on midway; right side patent process vaginalis with a non-obstructive

non-strangulated inguinal hernia with bowel loop and omentum as its content.

MRI pelvis (Fig. 2) revealed TTE with both testes in the left hemiscrotum, two vas deferens which were fused at its proximal end, and it terminates in a single left



**Fig. 2** MRI images of scrotum and pelvis. **a** Axial T2W image shows two testes in the left hemiscrotum ('T'). **b, c** Coronal T2W images shows varicocele, two separate vas deferens from each testes (arrows) and right side patent process vaginalis ('P'). **d** Axial T2W image shows right side inguinal hernia with bowel loop (arrow head). **e, f** Sagittal T2W images reveals two separate vas deferens (arrow head) which appears fused at its proximal end (arrows)

seminal vesicle; right seminal vesicle was aplastic (Fig. 3). No other urological abnormalities were detected. Sperm count revealed Azoospermia with normal ejaculate volume (2 ml). Following which hernioplasty was done for right inguinal hernia; surgical intervention with transeptal orchidopexy was considered but not performed due to the patient's unwillingness. Hence, we recommended an annual follow-up.

## Discussion

TTE is a rare congenital anomaly where both testes descend through a single inguinal canal and are present in same hemiscrotum [1, 2]. The cause for this is not well-known, though there are some theories which include anomalous origin of both testis from same genital ridge [3], early adherence and fusion of the developing Wolfian ducts [4] or origin of both vas deferens from one side. The first case of TTE was described by Lenhossek in 1886 [5]. Till now, approximately 100 cases of TTE have been reported in published studies [6].

An inguinal hernia is invariably present on the side to which the ectopic testis has migrated, and further it is classified by Gauder et al. [5] as type 1: associated with inguinal hernia; type 2: along with persistent rudimentary Mullerian duct structure, and type 3: along with associating disorders other than persistent Mullerian duct abnormality which includes contralateral seminal vesicle aplasia, hypospadias, pseudohermaphroditism, and scrotal abnormality.

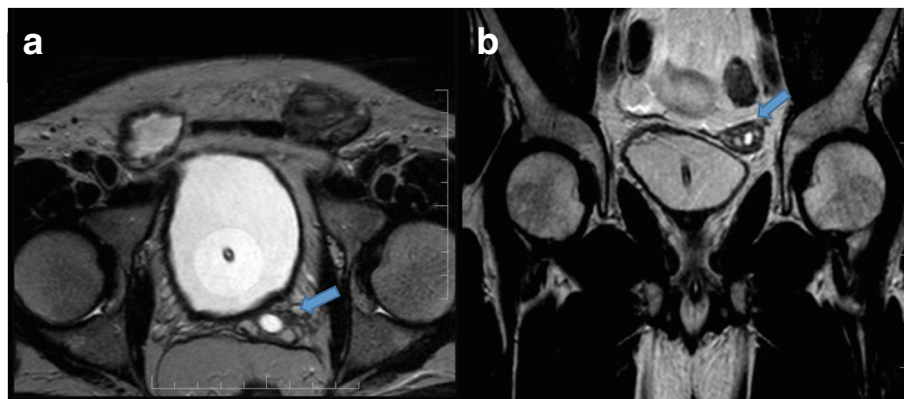
This anomaly is clearly described in children, with a mean age of 4 years at the time of diagnosis, but rarely encountered in adults [7]. Walsh et al. in their study concluded that testicular cancer was nearly 6 times more likely to develop in cryptorchid cases whose operations were delayed until after age 10 to 11 years [8].

So, an early and elaborate diagnosis of TTE should be made preoperatively by USG, magnetic resonance

imaging, and a CECT abdomen-pelvis to look for associated anomalies [1, 9]. MRI and MRV is the fundamental imaging modality in the diagnosis of TTE with 82.4% and 100% sensitivity, respectively [10], as it can provide us with the pre-operative location of the impalpable testes, intricate analysis of vas deferens and seminal vesicle, and thus helping us in the decision-making of the required surgical technique. It is also useful in distinguishing TTE from testicular duplication [11]. Laparoscopy provides both diagnosis and management of TTE and its associated anomalies [12]. The rarity of our case is in the synchronous presence of two vas deferens, which are fused at its proximal end and terminates in a single left seminal vesicle; the right seminal vesicle is aplastic and varicocele.

Dahal et al. [9] described a similar case of left TTE in a 42-year-old adult who presented with the left side reducible inguinal hernia and was operated on with hernioplasty and bilateral orchidopexy, in our case which had a different presentation with an irreducible hernia on the contralateral side. Yu et al. [13] presented a left side TTE in a 51-year-old man with associated right congenital cryptorchidism who was treated with laparoscopic resection. Similarly, Tepeler et al. [14] described a case of TTE but in 15 years old boy in whom left testis was seen in right inguinal region with right inguinoscrotal hernia; Moslemi et al. [6] had a similar case report of right side TTE with ipsilateral inguinal hernia. Gkekas et al. [2] presented with a case report of left TTE with single fused vas deferens, hypoplastic seminal vesicle with varicocele but without hernia which is different to our case.

Once a diagnosis of TTE is made, the primary goal of treatment is to preserve fertility and prevent the occurrence of malignancy. This is achieved by performing repair of congenital anomaly, hernia, and a trans-septal transposition orchiopexy or extra-peritoneal transposition orchiopexy with follow-up [15, 16].



**Fig. 3** MRI T2W axial (a) and coronal (b) images of pelvis shows single left seminal vesicle (arrow) with aplastic right seminal vesicle

## Conclusion

In conclusion, though TTE is a rare congenital anomaly, it should be considered as a differential diagnosis even in adult patients with unilateral absent testis and/or infertility, and if it is diagnosed, a detailed imaging and hormonal biochemical investigations should be employed considering the wide spectrum of associated conditions.

## Abbreviations

TTE: Transverse testicular ectopia; CTE: Crossed testicular ectopia; PMDS: Persistent Mullerian duct syndrome; ECG: Electrocardiogram; MRI: Magnetic resonance imaging; CECT: Contrast enhanced computed tomography

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Nil

## Authors' contributions

Dr. SP: initial imaging with usg, guided in MRI correlation imaging, and identification of the imaging findings followed by manuscript preparation. Dr. EP: gave second opinion on imaging findings and equally participated in preparation of the manuscript. Dr. YKA: assisted in preparation of the manuscript by collecting details from the literature. Dr. RD: reported the MRI pelvis of the patient, thus providing a detailed imaging assessment of the same. Dr. AV: who did the initial assessment of the patient, collected details from surgery department and treatment, and follow-up status of the patient. All the authors have participated sufficiently in contributing to the content of 'Transverse Testicular Ectopia with Inguinal Hernia in an Adult – A Case Report' and have read and approved the manuscript.

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## Availability of data and materials

Available

## Declarations

### Ethics approval and consent to participate

Ethical approval is not obtained, since it is a retrospective case report study. Informed written consent had been obtained from the participant for participation and publication of the same as a case report.

### Consent for publication

Informed written consent had been obtained from the participant for publication of the same as a case report.

### Competing interests

Nil

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