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# Transverse Testicular Ectopia and Hypotrophy in a 33-Year-Old Man with Azoospermia: A Case Report

## Abstract

Transverse testicular ectopia is a rare congenital condition in which both the testes descend through the same inguinal canal. We report the case of a 33-year-old man who was clinically diagnosed with transverse testicular ectopia, a diagnosis that was later confirmed during surgical exploration. The patient had been experiencing infertility, and a spermogram revealed azoospermia. Ultrasound findings were inconclusive, and further investigations such as magnetic resonance imaging and karyotyping were not performed. The patient underwent orchidopexy and hernia repair, and the postoperative course was uneventful. This case highlights the diagnostic and management challenges associated with congenital anomalies in low-income settings.

**Keywords:** Azoospermia, congenital, low-income, orchidopexy, testicular ectopia

## Introduction

Transverse testicular ectopia, also known as crossed testicular ectopia, is a rare congenital testicular malposition in which both the testes descend through the same inguinal canal. It is estimated to affect approximately 1 in 4 million children worldwide.<sup>[1,2]</sup> This condition may be associated with other anomalies such as congenital inguinal hernia, persistent or rudimentary Müllerian duct structures, hypospadias, scrotal abnormalities, and disorders of sexual development.<sup>[3]</sup> The diagnosis is usually made in childhood, with the mean age at diagnosis estimated to be around 4 years. Ultrasound is the most readily available diagnostic tool, while magnetic resonance imaging (MRI) is particularly useful before surgery to locate the testes, determine whether they share the same vas deferens, and identify any associated malformations.<sup>[1-4]</sup>

## Case Presentation

A 33-year-old man presented with an empty hemiscrotum, a condition first noticed during his preschool years. According to the patient, he frequently experienced intermittent bilateral groin swelling during early childhood. Occasionally, the left

testis could be palpated in the scrotum, but the right testis was never felt. At the age of 7, a healthcare provider visited the village where he lived. After examining him, he suspected that he was having a right inguinal hernia and proceeded with a groin exploration at a local medical center. However, after exploring the right groin and finding neither a hernia nor a testis, the procedure was discontinued. Since then, the patient had been aware of the abnormality but did not seek further medical care due to financial constraints. At the age of 13, the left testis could be palpated in the left hemiscrotum, although a persistent left groin bulge was noted. At 23 years of age, while preparing for a sporting event, he was examined by a physician who requested a scrotal ultrasound, which revealed no visible testes in the scrotum. One year prior to presentation, during an evaluation for couple infertility, a spermogram revealed azoospermia. A repeat scrotal ultrasound demonstrated a homogeneous hypotrophic right testis, bilateral hydrocele, and left testicular ectopia. Concerned about the potential risk of testicular cancer, the patient requested orchidopexy. However, further investigations such as MRI

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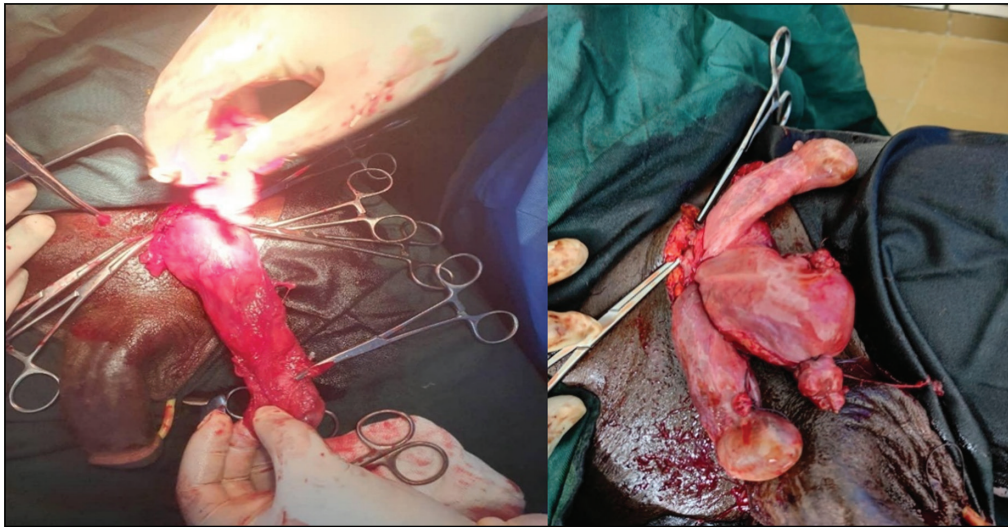


**Figure 1:** Shows two images placed side by side; the image on the left depicts a common tunica vaginalis enclosing both the testes, and the image on the right delineates the separated vaginalis and testes

and karyotyping were not performed due to financial limitations. The patient also reported a family history of testicular abnormalities: his father had retractile testes that resolved spontaneously, while his younger brothers have untreated cryptorchidism.

On admission, a right groin scar was noted, and the right hemiscrotum was hypotrophic and empty. The left testis was hypotrophic but palpable in the left hemiscrotum. Transillumination was positive, and a partially expansile, reducible mass was present in the left inguinal region. The vital signs, as well as chest and abdominal examinations, were unremarkable. Transverse testicular ectopia was suspected. Informed consent was obtained after the patient was clearly informed that the surgery would not guarantee improvement in fertility but could significantly reduce the risk of testicular cancer, which would still remain higher than that of the general population. Following a pre-anesthetic consultation and normal laboratory findings, the patient was scheduled for surgery.

Intraoperatively, two hypotrophic testes sharing the same tunica vaginalis were found on the left side, with two distinct spermatic cords. One testis was located high in the inguinal canal, while the other was positioned below the external inguinal ring. Hydrocele and thickening of the tunica vaginalis were noted. Blunt dissection of the tunica vaginalis from the surrounding tissues was performed to free it. The tunica vaginalis was then incised and the hydrocele drained. Both spermatic cords and testes were dissected from the processus vaginalis, which was subsequently ligated at the internal ring. The cremasteric muscles were dissected to achieve adequate length before fixation. The testes were carefully implanted in the left and right hemiscrota while avoiding twisting or entanglement of the spermatic cords. A biopsy sample was taken but was not analyzed. The postoperative period was unremarkable,

and the patient was advised to undergo an MRI whenever possible [Figure 1].

## Discussion

Our case most likely represents type I transverse testicular ectopia, the most common form, which is frequently associated with an inguinal hernia. However, MRI was not performed to investigate potential associated congenital anomalies. The patient also reported a family history of retractile testes and cryptorchidism, supporting the hypothesis of a possible genetic etiology.<sup>[5]</sup>

The average age of presentation is approximately 4 years; however, our patient presented at 32 years of age, despite being aware of his abnormal external genitalia since childhood.<sup>[6]</sup> Delayed presentation is a common finding in low- and middle-income countries, where neonatal examinations are not routinely performed by pediatricians or general practitioners. Additionally, out-of-pocket payment remains the primary means of accessing health care due to the lack of universal health coverage, while stigma and local beliefs further contribute to delays in seeking care.

When comparing our case with a similar report of a 50-year-old man diagnosed in adulthood, who presented with abdominal pain initially suspected to be due to malignancy, both patients were aware of their scrotal abnormalities from childhood. Unlike our patient, however, that individual had fathered two children, and his diagnosis was confirmed by MRI.<sup>[7]</sup>

The diagnostic challenges encountered in low-income settings such as ours are significant and cannot be overlooked. Notably, this patient's first formal consultation and ultrasonographic evaluation occurred only in adulthood, despite a history of non-therapeutic exploratory

right inguinal surgery during childhood. Furthermore, ultrasound findings suggested right testicular ectopia with a normally positioned left testis, underscoring the importance of meticulous physical examination in establishing a clinical diagnosis, particularly where financial constraints limit access to advanced imaging.

Additional investigations—including hormonal assays, karyotyping to determine genetic sex, and MRI to identify associated anomalies such as persistent Müllerian duct structures—were not performed.<sup>[8,9]</sup> These investigations could have provided further insights into the patient's azoospermia and infertility. Despite understanding their importance, the patient was unable to afford them.

Most patients with transverse testicular ectopia are managed with transeptal orchidopexy and herniotomy. However, they remain at an increased risk of infertility, testicular malignancy, and other congenital anomalies, necessitating multidisciplinary management. Although our patient underwent transeptal orchidopexy and herniotomy, comprehensive multidisciplinary care was not provided. This reflects a broader systemic issue in low-income settings, where poverty, lack of universal health coverage, and a shortage of specialists significantly limit access to holistic care. In this case, the patient did not receive psychiatric or endocrinological evaluation, and the biopsy specimen obtained intraoperatively was not analyzed.

## Conclusion

Transverse testicular ectopia is a rare congenital malformation and should be suspected in patients presenting with an inguinal bulge associated with an ipsilateral descended testis and a contralateral empty hemiscrotum or undescended testis.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## Acknowledgement

Nil.

## Author Contributions

GMA carried out the surgery, drafted and reviewed the manuscript, and managed journal correspondence as the corresponding author. NPP participated in patient care, reviewed and edited the manuscript. GA participated in patient care, reviewed and edited the manuscript. CA

participated in patient care, reviewed and edited the manuscript. NCT participated in patient care, reviewed and edited the manuscript. All authors reviewed and approved the final version of the manuscript. GMA acts as the Guarantor.

## Data availability statement

The data supporting the findings of this study can be obtained from the corresponding author upon request.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

## Use of AI in drafting the manuscript

AI-assisted tools were used for language editing and grammatical refinement of the manuscript. All scientific content, data, analysis, interpretation, and conclusions are entirely the work of the authors.

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