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CASE REPORT

Bilateral Inguinal Canal Cryptorchidism in an 18-Month-Old: A Case Report and Brief Review

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ABSTRACT

Aim: To signify the importance of physical examination and the examination of contralateral side in cryptorchidism (undescended testis, UDT) cases as the most common congenital anomaly of the male genitalia. **Case:** A healthy 18-month-old boy was brought by his mother with concern that the right testis had not descended. On examination, both hemiscrota were empty with no palpable testes. Ultrasonography demonstrated no intrascrotal testes; testicular shadows with homogeneous echotexture were identified within the inguinal canal bilaterally (right: ~0.90 × 0.44 × 1.08 cm; left: ~0.90 × 0.61 × 1.33 cm). Findings were consistent with bilateral inguinal-canal cryptorchidism. **Conclusion:** This case underscores the primacy of systematic physical examination—supported by targeted ultrasonography for localization—in evaluating suspected UDT. Given age >12 months and inguinal-canal location, orchiopexy is recommended, ideally before 18 months, to optimize testicular growth and reduce long-term risks (subfertility, malignancy, torsion). Hormonal therapy (e.g., human chorionic gonadotropin/hCG) may be considered in select circumstances but is generally less effective than surgery. Early referral and timely operative management remain the standard of care.

Keywords: undescended testis, cryptorchidism, testis, pediatric.
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INTRODUCTION

Cryptorchidism, also known as undescended testis (UDT), is the most common congenital anomaly of the male genitalia and is defined by the absence of one or both testes from the scrotum after birth. Its prevalence is approximately 3% among term newborns and can reach 30% in premature infants, with most spontaneous descent occurring within the first three months of life; persistence beyond six months rarely resolves without intervention.[1,2] The pathogenesis involves disruption of the transabdominal and inguinoscrotal phases of testicular descent, driven by hormonal and anatomic factors—particularly insulin-like 3 hormone (INSL3), androgens, and the gubernaculum—together with perinatal risk modifiers such as prematurity, low birth weight, and maternal smoking.[2,3]

Accurate clinical classification is essential. True cryptorchidism refers to a testis that arrests along the normal path of descent (abdominal, inguinal canal, suprascrotal), whereas an ectopic testis deviates from this path after passing the external ring. Common ectopic locations include the superficial inguinal pouch (Denis Browne pouch), perineum, femoral canal, contralateral hemiscrotum, and pre/suprapubic region; these should not be confused with a retractile testis, which can be manipulated into the scrotum and typically requires observation rather than surgery.[4-6] A careful, standardized physical examination performed in a warm environment remains the

diagnostic cornerstone, allowing most testes to be categorized as palpable—often within the inguinal canal—or non-palpable (intra-abdominal, atrophic, or absent) before any imaging is considered.[1,2,7]

Timely surgical correction, typically orchiopexy between 6 and 18 months of age, is recommended to optimize testicular growth, enable reliable surveillance, and mitigate the risks of subfertility and torsion. Delayed repair beyond infancy is associated with poorer germ-cell parameters and worse fertility markers later in life.[1–3,8,9] For palpable inguinal-canal testes, open inguinal or scrotal orchiopexy achieves high success with low morbidity; laparoscopy is primarily reserved for non-palpable or intra-abdominal testes.[8,9]

Hormonal therapy—most commonly human chorionic gonadotropin (hCG) or gonadotropin-releasing hormone (GnRH)—shows modest and inconsistent efficacy with higher relapse rates than surgery and is therefore not recommended as first-line treatment when pediatric surgical expertise is available.[8,10] Within this framework, the present case of bilateral inguinal-canal cryptorchidism in a toddler underscores the importance of precise clinical classification, selective use of ultrasonography for localization when needed, and timely orchiopexy within the recommended therapeutic window to support long-term reproductive health.

CASE REPORT

A 27-year-old mother brought her 18-month-old son (initials F) for evaluation of an undescended right testis. There were no urinary or gastrointestinal complaints (no dysuria, frequency, hematuria, constipation, vomiting, or abdominal distension). Family history was notable for the father having had undescended testes corrected surgically prior to marriage. The child had been seen by a pediatrician, who recommended ultrasonography for localization.

On physical examination, both hemiscrotal were empty with no palpable testes in the scrotum or along the inguinal canals. The external genitalia were otherwise normal for age; there was no inguinal erythema, tenderness, or signs of hernia or torsion. Vital signs were within normal limits, and the remainder of the systemic examination was unremarkable.

Ultrasonography of the groin and scrotum demonstrated no intrascrotal testes bilaterally (Figure 1). Echogenic foci with homogeneous testicular echotexture, consistent with testes, were identified within the inguinal canal on each side. The right testis measured approximately 0.90 × 0.44 × 1.08 cm (Figure 2), and the left testis measured approximately 0.90 × 0.61 × 1.33 cm (Figure 3). There was no sonographic evidence of torsion, mass, calcification, or hydrocele. Vascularity was not reported as abnormal. These findings supported the diagnosis of bilateral inguinal-canal cryptorchidism (undescended testes).

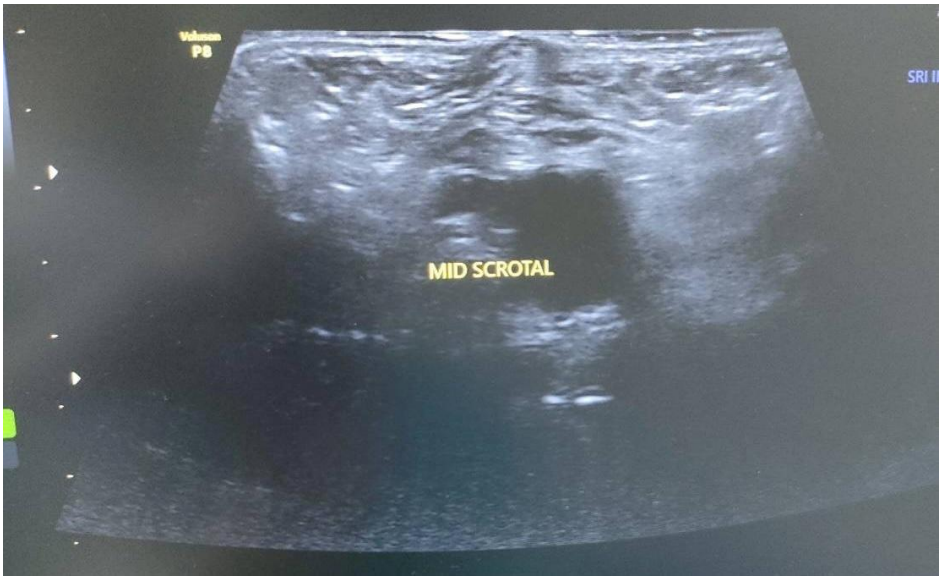

Figure 1. Ultrasound examination of mid scrotal

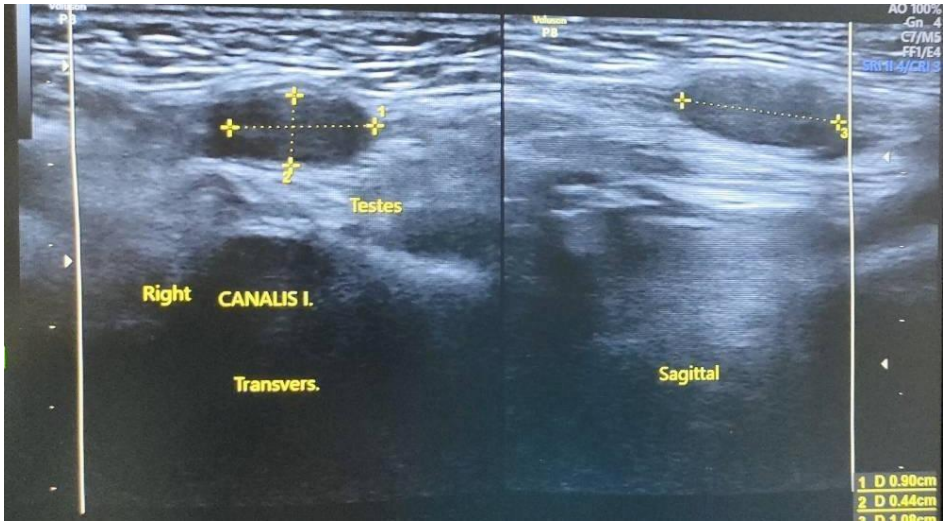

Figure 2. Ultrasound examination of right testicle

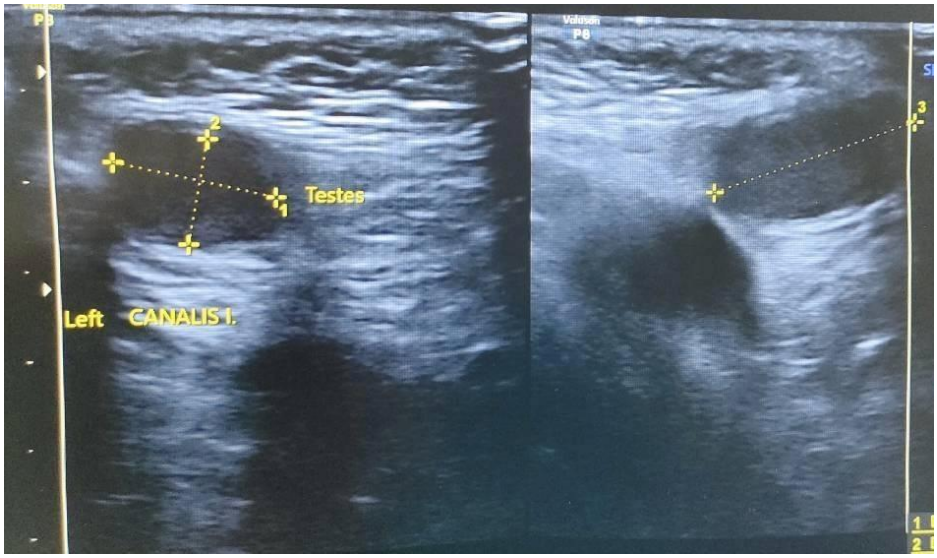

Figure 3. Ultrasound examination of left testicle

Based on the child's age (>12 months), clinical findings, and bilateral inguinal-canal localization on ultrasonography, timely orchiopexy was recommended to optimize testicular growth and facilitate long-term surveillance. Parents were counselled on the procedure, expected recovery, and signs warranting urgent review (acute scrotal pain, increasing groin swelling, fever, vomiting).

DISCUSSION

This toddler presented with bilateral undescended testes localized to the inguinal canals, an age at which spontaneous descent is unlikely and operative correction is recommended. Cryptorchidism (undescended testis) is the most common congenital anomaly of the male genitalia, affecting ~3% of term and up to ~30% of preterm newborns; persistence beyond 6 months rarely resolves without intervention and is associated with adverse germ-cell development and subfertility later in life.[1-3] Testicular descent depends on coordinated transabdominal and inguinoscrotal phases mediated by insulin-like 3 hormone (INSL3), androgens, and the gubernaculum; perturbations in these pathways, together with perinatal risks (prematurity, low birth weight, maternal smoking), contribute to the condition's multifactorial etiology.[1-3,4,5]

Clinical examination remains the diagnostic cornerstone. A standardized exam in a warm setting distinguishes true undescended from retractile testes and helps separate ectopic locations (e.g., superficial inguinal pouch, perineum, femoral canal, contralateral hemiscrotum, suprapubic region) from testes arrested along the normal path of descent.[1,6,7] In palpably inguinal cases, imaging is not routinely required but targeted ultrasonography can document localization and echotexture and aid counselling, as in this child; sonographic identification of homogeneous ovoid structures within the canals without features of torsion or mass is typical.[6–8]. A positive family history (as in this case) is relevant, as heritable factors modestly increase risk and support vigilance for siblings.[3]

Definitive management is orchiopexy within the 6–18 month window to optimize testicular growth, enable examination/surveillance, and reduce risks of torsion and diagnostic delay for malignancy.[2,3,9,10] For palpable inguinal-canal testes, open inguinal or scrotal orchiopexy yields high success with low morbidity; laparoscopy is primarily reserved for non-palpable/intra-abdominal testes and provides both diagnosis and treatment when needed.[9–13] Comparative syntheses indicate favorable outcomes for early versus delayed orchiopexy, with better fertility surrogates when surgery is performed in infancy; pooled data show high primary orchiopexy success and acceptable atrophy/complication rates.[10,12–14] In contrast, hormonal therapy (human chorionic gonadotropin or gonadotropin-releasing hormone) has modest and inconsistent efficacy with higher relapse and is not recommended as first-line where pediatric surgery is available.[15]

Follow-up after orchiopexy should confirm stable scrotal position, testicular volume/perfusion, and educate caregivers on warning signs (acute scrotal pain, rapidly enlarging groin swelling, fever). Although malignancy risk in corrected cryptorchidism is low, earlier surgery facilitates examination and may mitigate risk; clinicians should also be alert to acquired/ascending testis during childhood and adolescence, which warrants

re-evaluation.[3,16–20] Collectively, this case underscores three practice points: (i) rely on a meticulous, dynamic examination to classify testes as palpable vs non-palpable and to distinguish ectopia; (ii) use ultrasonography selectively to support localization when it informs counseling or planning; and (iii) schedule timely orchiopexy within guideline windows to support long-term reproductive health.

This single-patient report limits generalizability and cannot inform incidence, comparative effectiveness, or long-term outcomes. Follow-up beyond the diagnostic phase was unavailable, so late events (e.g., atrophy, re-ascent, fertility impact) cannot be assessed. Imaging and management details reflect local practice, which may differ across institutions.

CONCLUSION

Cryptorchidism (undescended testis) is the most common congenital anomaly of the male genitalia and should be diagnosed primarily by meticulous physical examination, with ultrasonography used selectively for localization. The definitive treatment is orchiopexy, ideally performed by 12 months and no later than 18 months to optimize testicular growth, surveillance, and long-term fertility while reducing risks such as torsion. Hormonal therapy (e.g., human chorionic gonadotropin) has modest, inconsistent efficacy and higher relapse than surgery, and is not recommended as first-line therapy. Early referral and timely operative management remain the standard of care.

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DISCLOSURE

The authors declare no conflict of interest related to this case series.

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