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CASE REPORT

Undescended testis in a middle-aged cadaver: a case report

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ABSTRACT

Cryptorchidism is most common genitourinary anomaly in males. The anatomical variations through the cadaveric studies provide crucial information about the relevant structure. We report a rare instance of unilateral testis that was not descended during anatomical dissection. After being preserved using conventional methods, the cadaver showed unilateral undescended right testis free of any visible indications of cancer or other testicular problems. While the left testis was palpable in the scrotal sac, the right testis was placed outside to the superficial ring. With intact blood vessels and vas deferens, both testes showed normal size and structure. Adult-onset cryptorchidism is an unknown origin, which highlights the significance of early diagnosis in patients who are still alive. Adults with undescended testes are at risk for infertility and hormone abnormalities. The importance of routine checkups and prompt treatment for cryptorchidism is needed. Cryptorchidism is a common anomaly requiring early recognition. Timely intervention reduces long-term risks including infertility and malignancy. Hormonal therapy is generally not recommended due to limited efficacy and potential side effects.

INTRODUCTION

Cryptorchidism is a condition where there is both abnormal testicular development and its descent into the scrotum. The stages of testicular embryogenesis and descent include; first stage of gonadal differentiation at 3-8 weeks and transabdominal descent at 7-10 weeks with second stage of inguinoscrotal descent occurring at 15-40 weeks.[1] This is aided by hormones like Mullerian inhibiting substance (MIS) in first phase of descent and Insulin-like hormone 3 (Insl-3) in the second phase of descent. The exact pathogenesis of the condition is not understood well but the evidence suggests that mutation in the genes encoding MIS and Insl3 poses the risk in of undescended testis.[2] Risk factors include chromosomal abnormalities, mutations, in utero trauma, ischemia, infection, and maternal substance abuse. Cryptorchidism in long term may have complications such as infertility and neoplastic degeneration.[3] Male genital abnormalities like cryptorchidism are extremely common; they affect 2–4% of male infants and are more prevalent in premature babies.[2] Although cryptorchidism is readily evident at birth, definitive treatment is frequently delayed because more than 50% of cases may spontaneously descend down to the scrotum by 1 year of age.[4] Cryptorchidism may not present as a single anomaly rather it can be a part of broad testicular dysgenesis syndrome with functional abnormalities involving other organ system too.[1] The anatomical variations through the cadaveric studies provide crucial information about the relevant structure.

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CASE PRESENTATION

During the regular anatomy dissection class, a middle-aged male cadaver was dissected as part of educational program. The dissection was performed in the dissection hall of anatomy department of Janaki medical college and Teaching Hospital.

Conventional embalming methods had been used to preserve the cadaver.

While performing the dissection of femoral triangle and exploring of inguinal ligament, a mass was felt in the right inguinal region. The skin of inguinal region was reflected, and layered dissection were performed. A mass of tissue was observed in superficial inguinal ring. Scrotal sac and Testes were examined. Left testis was normally positioned in scrotum, and right testis was absent from the scrotal sac. The right testis was present just at the outside of superficial inguinal ring.

Due to the nature of cadaveric specimens, we were unable to acquire a thorough medical history for the subject. On the basis of the anatomical context and the existence of additional anatomical features that were preserved, the cadaver seemed to be a male middle-aged adult.

There were no obvious indications of atrophy or cancer, and both testes were comparatively normal in size and shape. Notably, neither testis showed any signs of pathological abnormalities or malignancies. This finding indicates that the person's cause of death had nothing to do with testicular problems. Further dissection was performed and structures were examined. The vas deferens, blood vessels, and associated structures were found to be present and intact on both side (Figure 1 and 2).

Figure 1: Showing right testis in superficial inguinal ring

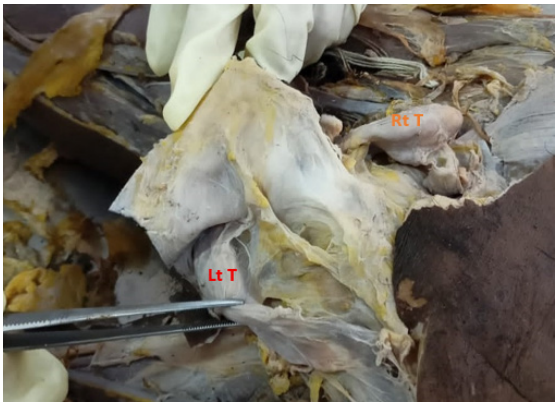

Figure 2: Showing right and left testis

DISCUSSION

Cryptorchidism, another name for undescended testis (UDT), is a frequent congenital disorder affecting the male genitalia in which one or more testicles are absent from the scrotum. This is a common anomaly requiring early recognition. The UDT is subdivided according to the lower extremity of its range of movement either in abdominal, inguinal or canalicular and emergent types. All of them are associated with patent processus vaginalis. The ectopic testis with complete hernial sac is rare and may occupy a pubic, femoral or most commonly the superficial inguinal position contained in superficial inguinal pouch. The inguinal canal is another place to look for the lost testicle.[5]

Normally starting to form between weeks 7 and 8, the testes remain cephalad to the internal inguinal ring until week 28, at which point, with the help of condensed mesenchyme (the gubernaculum), they begin to descend into the scrotum. Maternal exposure to estrogenic or antiandrogenic medicines, androgens, mullerian-inhibiting factor, gubernacular regression, and intra-abdominal pressure are some of the hormonal, physical, and environmental factors that mediate the onset of descent.[1]

After their normal descent, true undescended testicles remain in the inguinal canal or, less commonly, in the abdominal cavity or retroperitoneum. Ectopic refers to a testis that normally descends through the external ring but diverts to an unusual location and resides outside of the traditional descent path[6] (suprapubically, in the superficial inguinal pouch, within the perineum, or along the inner surface of the thigh).

The terms ectopic, canalicular, extra-canalicular, suprapubic, and peeping (sliding in and out of the internal inguinal ring) are also used to describe the location of the palpable testis.[6,7] A testicular examination should be performed on the patient at birth and regularly, to ascertain the position and growth of the testicles. One Physicians must distinguish between palpable and non-palpable testicles in the context of undescended testes.

The diagnosis and treatment of cryptorchidism usually occur in infancy or childhood because testicular descent is a crucial stage in fetal development.[8] This case, however, emphasizes how untreated or undetected cryptorchidism can continue into adulthood. Possible causes of the unilateral undescended testes in this instance could be genetic susceptibility, gubernaculum structural anomalies, or hormonal abnormalities. However, it is difficult to determine the precise cause with certainty in the absence of the person's genetic information or medical history.

Torsion, hernias, trauma and pathologic changes are risk factors for pathologic changes that result in subfertility and malignant transformation in the undescended testes.[8] As a result, it is essential that therapy should be given at the right moment.

Spontaneous descent rarely occurs after 6 months of age. Orchidopexy is the standard of care and should be ideally

performed between 6–12 months. Timely intervention reduces long-term risks including infertility and malignancy. Hormonal therapy is generally not recommended due to limited efficacy and potential side effects.[9] Although we were unable to obtain all the relevant detailed medical history of the person, the anatomical variations through the cadaveric studies provide crucial information about the relevant structure. This case study provides knowledge of the wider ramifications of cryptorchidism and the necessity of providing all-encompassing clinical care over the course of a person's life.

CONCLUSION

This case highlights the significance of taking cryptorchidism into consideration even in adult patients who do not appear to have any symptoms or cancers, even though the precise etiology is still unknown due to the lack of a thorough medical history. Prompt diagnosis and timely intervention is necessary to prevent complications of infertility, hormonal imbalances and risk of testicular neoplasm development associated with undescended testes.

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