CASE REPORT

Crossed Testicular Ectopia in a Patient Presenting with Undescended Testis

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Crossed Testicular Ectopia (CTE), is a rare congenital anomaly in which both gonads migrate toward the same hemiscrotum. This may be due to a deviation of testicular descent resulting in unilateral location of both testes. Reported is a case of crossed testicular ectopia in a 1-year-old boy who presented with undescended testis. On exploration, both testes were present in the right hemiscrotum. Subsequently, transseptal orchidopexy was performed. CTE should be considered in patients presenting with undescended testis, unilateral hernia and concurrent cryptorchidism of the contralateral side. In suspected cases, laparoscopy and ultrasonographic evaluation may be helpful in diagnosing this condition.

Keywords: testis, undescended testis, cryptorchidism, testicular ectopia

Introduction

Crossed testicular ectopia/transverse testicular ectopia is an extremely rare anomaly[1], in which both gonads migrate toward the same hemiscrotum. The diagnosis could not be made preoperatively in most of the reported cases. Magnetic resonance imaging, magnetic resonance venography, and laparoscopy are useful for diagnosis and management.[3] The case that is presented can serve as a reminder of the importance of preoperative planning and differential diagnosis to consider in patients presenting with bilateral undescended testis.

The Case

A one-year-old male, born to a 27 year old G2P2 (2002) via normal spontaneous delivery, term, BW 15kg, AS 8,9 who came in due to a non-palpable testis, left. General physical examination was unremarkable. Hematological examination and biochemistry laboratory data were normal. On external genitalia examination, the right testis was palpable inguinally, both hemiscrota were empty. Initial plan for the patient was to do a diagnostic laparoscopy, orchidopexy. Intraoperatively, post induction of anesthesia, the authors noted the descent of the right testis from the inguinal area to the right hemiscrotum. Upon reassessment and physical examination. They palpated bilateral testis on right hemiscrotum. Due to laparoscopic tower malfunction, the authors proceeded to synchronous bilateral orchidopexy. First, scrotal incision was made. The right testis with its overlying tunica vaginalis was found at the deep inguinal ring (Figure 1). After opening of the tunica, the fluid inside of it was drained and left testis was found at the proximal part of the cord (Figure 2). The releasing of cords and bilateral orchidopexy were done (Figure 3). Two

cords had common origin about 3-4 cm. The two cords were released by dissecting at the site of their bifurcation from proximal to distal. The left testis was then transferred to the left hemiscrotum. Both testes were fixed in the subdartos pouch. Post operatively, the patient had stable vital signs, with unremarkable hospital stay. He was discharged stable and improved after three days.

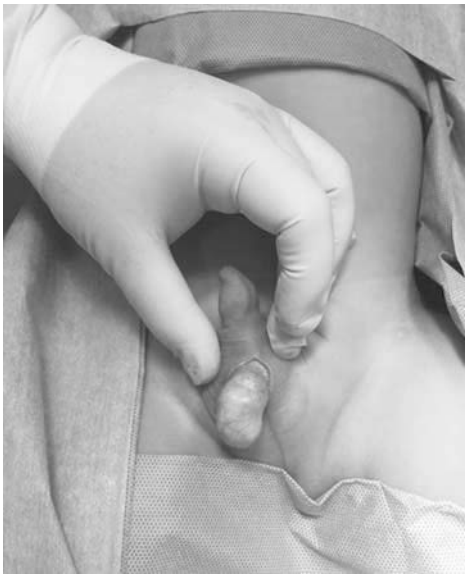

Figure 1. Right testis with overlying tunica vaginalis

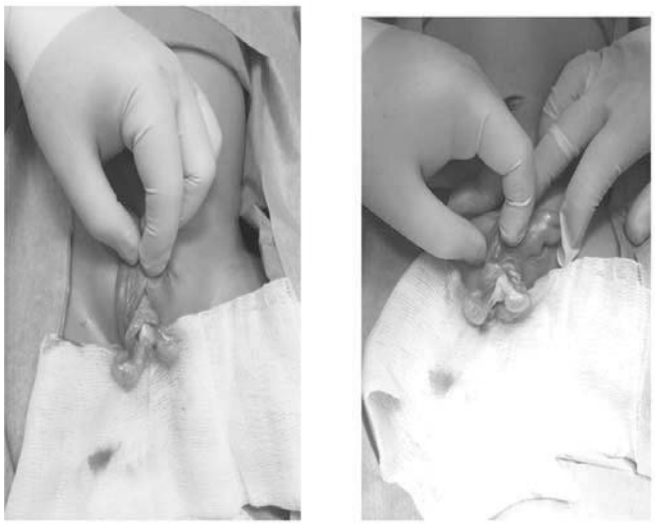

Figure 2. Both testes are visible, protruding from the right hemiscrotum as CTE

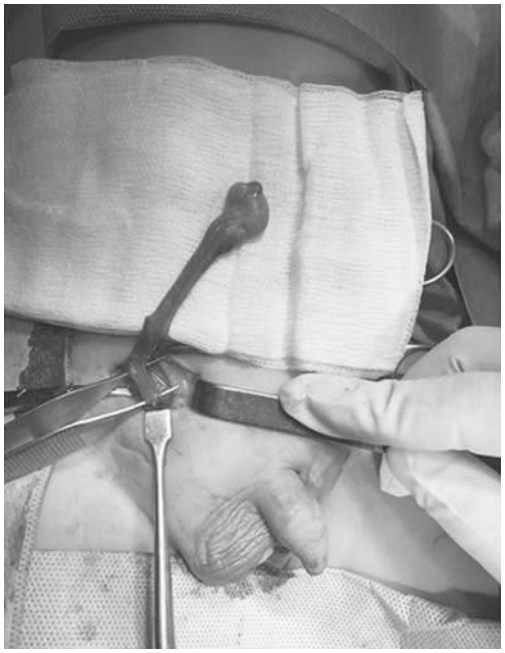

Figure 3. Releasing of the right cord

Discussion

Crossed testicular ectopia (transverse testicular ectopia) is a rare but well-defined congenital abnormality where descent of both testicles occurs through a single inguinal canal.[4] The typical clinical scenario is an inguinal hernia with contralateral undescended testicle with the mean age at presentation of 4 years.[7] Discovery of crossed testicular ectopia is often intraoperative during herniorrhaphy with inguinal hernia being present in 41% of cases.[2] Gauderer, et al.[6] have described a classification system for crossed testicular ectopia based on the presence of associated abnormalities: type 1 (40%-50%) associated with inguinal hernia alone, type 2 (30%) associated with persistent or rudimentary mullerian duct structures, and type 3 (20%) associated with other genitourinary abnormalities without mullerian remnants.

The etiology of crossed testicular ectopia remains undefined but has been speculated to result from abnormal inguinoscrotal descent of the ectopic testes.[2] The association with müllerian duct abnormalities has led some to hypothesize a mechanical interruption of testicular descent by persistent müllerian structures.[4] The association

with cryptorchidism is accompanied by an increase in malignancy potential of crossed ectopic testes with malignancy rates similar to undescended testes at 18%.[5]

The treatment of crossed testicular ectopia is focused on the detection of associated congenital abnormalities and placement of the ectopic testicles into its anatomical position. This preserves fertility and allows monitoring for the development of malignancy. Intraoperative intraabdominal evaluation via transinguinal or standard diagnostic laparoscopy allows for detection of müllerian structures and genitourinary congenital abnormalities that are present in 30% and 2% to 97%, respectively.[6,7] Transseptal orchidopexy via contralateral inguinal incision is the treatment of choice if adequate length of spermatic cord is present. Laparoscopy assisted transabdominal orchiodopexy has been described and may offer alternative to orchiectomy in cases of inadequate spermatic cord length.[3] Orchiectomy should be reserved for cases where ectopic testes cannot be mobilized to a palpable position given the future risk of malignancy.[9] Addition of pelvic ultrasound to the preoperative evaluation of patients with inguinal hernia and contralateral cryptorchidism may detect ectopic testes and associated congenital abnormalities allowing for more definitive operative planning.

Conclusion

Patients presenting with undescended testis should be considered for crossed testicular ectopia. Careful physical examination of a child in several positions and confirmation of incomplete descent of the testis to a dependent scrotal position after induction of anesthesia is still the gold standard in diagnosing crossed testicular ectopia.

Preoperative planning may include pelvic ultrasound to evaluate for genitourinary abnormalities. Intraoperative discovery of supernumerary testicles during exploration should prompt laparoscopy to evaluate for müllerian duct abnormalities. Treatment options include transseptal orchidopexy to the contralateral hemiscrotum, laparoscopic-assisted trans-abdominal orchiodpexy, or orchiectomy. Close monitoring for the development of testicular malignancy is paramount to the long-term care of these patients.

References

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