Crossed testicular ectopia with preoperative ultrasound

John M. Lacy, MD, Greg E. Stewart, MD, Ali M. Ziada, MD
Department of Surgery, Division of Urology, University of Kentucky College of Medicine, Lexington, Kentucky, USA

LACY JM, STEWART GE, ZIADA AM. Crossed testicular ectopia with preoperative ultrasound. *Can J Urol* 2013;20(4):6875-6877.

Crossed testicular ectopia/transverse testicular ectopia is a rare congenital anomaly. It is most commonly identified intraoperatively in the setting of inguinal hernia repair with contralateral cryptorchidism. We report a case of crossed testicular ectopia identified in a 3-month-old male who presented with right cryptorchidism. Preoperative ultrasound revealed no testicle on the right and two testicles on the left – one within the left hemiscrotum and one within the left inguinal canal. Laparoscopy at 7 months of age revealed a closed right external ring and right ectopic testicle at the left external ring. Bilateral orchiopexy was performed.

Key Words: cryptorchidism, ectopic testis, congenital anomaly

Introduction

Crossed testicular ectopia/transverse testicular ectopia is a rare congenital anomaly. First described in 1886 by von Lenhossek, there have been only approximately 100 subsequent case reports described in the literature. It is often associated with other congenital anomalies including inguinal hernia and persistent Müllerian duct syndrome and other genitourinary (GU) anomalies such as hypospadias. It is most commonly identified intraoperatively in the setting of inguinal hernia repair with contralateral cryptorchidism. We report a case in which crossed testicular ectopia was diagnosed by preoperative ultrasound and confirmed with laparoscopy.

Accepted for publication April 2013

Address correspondence to Dr. John Lacy, Department of Urology, University of Kentucky, 800 Rose Street, Suite MS283, Lexington, KY 40536-0298 USA

Case presentation

A 3-month-old healthy male child presented to clinic in consultation of a right undescended testicle. On physical examination, the left testicle was palpable in the scrotum and ipsilateral inguinal exam was suspicious for an additional testicle. No testicle was palpable on examination of the right side and he was noted to have an underdeveloped right hemiscrotum. While not routinely performed at our institution, a scrotal and abdominal ultrasound was ordered due to the abnormality palpated along the line of testicular descent on the left side. Ultrasound did not identify a right-sided testicle. A normal appearing testicle

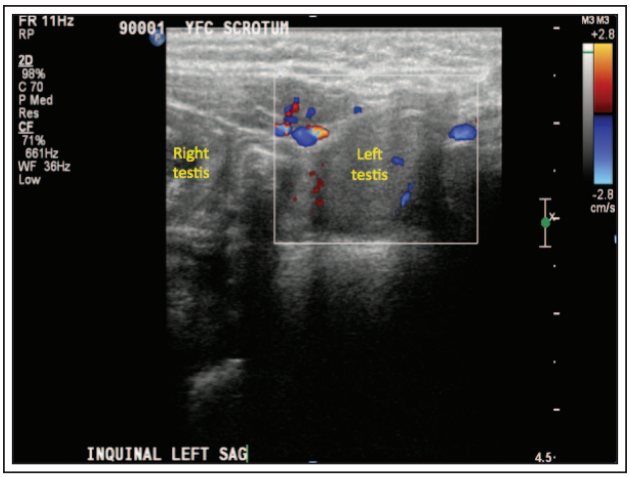

Figure 1. Ultrasound shows two testicles on the left – one within the scrotum and one within the inguinal canal. There was no testicle noted on the right side.

was identified within the left hemiscrotum and an additional testicle was seen in the left inguinal canal, Figure 1. Differential diagnosis at this stage included crossed testicular ectopia versus polyorchidism.

At 7 months of age, laparoscopic exploration was performed. Intra-operatively, an ectopic right testicle was identified at the level of the left internal ring. The right testicular vessels originated on the right side and the right inguinal ring was closed, Figure 2. Two distinct cords were noted entering the left inguinal ring, Figure 3. No persistent Müllerian structures were found.

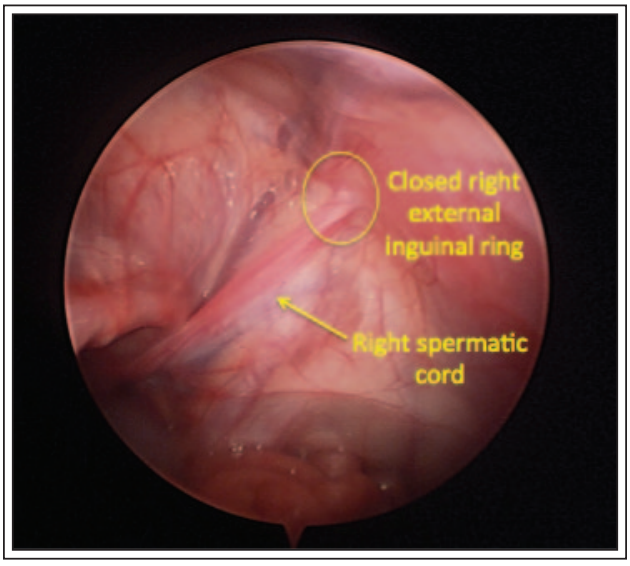

Figure 2. Right gonadal vessels originating from the orthotopic position. Right inguinal ring is closed.

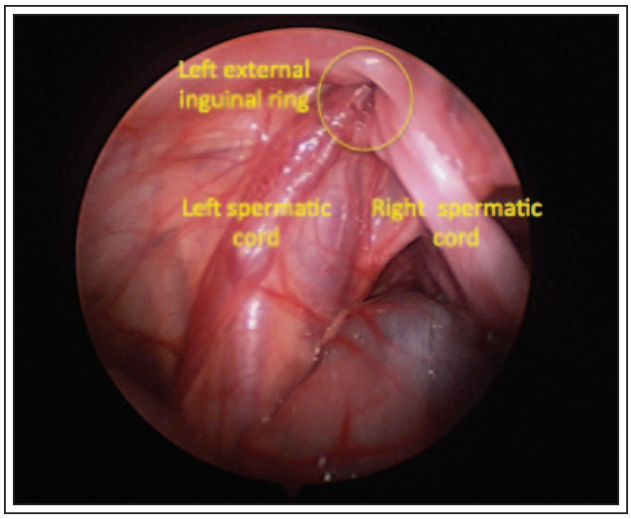

Figure 3. Two distinct cords entering the left inguinal ring.

Bilateral laparoscopic-assisted orchiopexy was performed. The right-sided gubernaculum was divided at the level of the left inguinal ring. The vasa deferentia were distinct and the right vas deferens was identified posterior to the bladder. Dissection of the right spermatic cord was performed until there was adequate length to bring the ectopic testicle into the right hemiscrotum, where it was fixed with 3-point fixation with 4-0 vicryl suture. A 3-point fixation of the left testicle was also performed due to its significant mobility and concern for the potential future retraction into the inguinal canal. At 1 month follow up, both testicles were palpable in their orthotopic position.

Discussion

Crossed testicular ectopia is a rare anomaly often associated with inguinal hernia and/or persistence of Müllerian structures. First described in 1886 by von Lenhosek, there have been approximately 100 case reports in the literature. In our case, diagnosis was made prior to surgery with preoperative ultrasound. Though there are other reports of preoperative diagnosis of crossed testicular ectopia with magnetic resonance imaging and (MRI),[1] no preoperative imaging has been shown to reliably detect ectopic testes and therefore do not alter the need for laparoscopic investigation.[2] Despite the low cost, ease of access, and lack of radiation associated with ultrasound,[3,4] neither ultrasound nor MRI is sensitive enough to alter the surgical algorithm in the evaluation of a nonpalpable testis.[5,6] In this case laparoscopy provided diagnostic information by ruling out polyorchidism or persistent Müllerian structures prior to orchiopexy.

Management of the undescended testis in crossed testicular ectopia does not differ from that of other types of cryptorchidism. Most reported cases are in prepubertal boys, but there are reports of orchiectomy in cases of crossed testicular ectopia in patients greater than 10 years old with a normal contralateral testis.[7] There are no known long term follow up issues in this population.

Patients with cryptorchidism and contralateral inguinal hernia should raise suspicion for crossed testicular ectopia. Laparoscopy remains the standard of care for this anomaly and preoperative imaging does not alter the management algorithm. Surgical management of the undescended testis and subsequent follow up should follow established guidelines for cryptorchidism. □

References

1. Lam WW, Le SD, Chan KL, Chan FL, Tam PK. Transverse testicular ectopia detected by MR imaging and MR venography. *Pediatr Radiol* 2002;32(2):126-129.
2. Hrebinko RL, Bellinger MF. The limited role of imaging techniques in managing children with undescended testes. *J Urol* 1993;150(2 Pt 1):458-460.
3. Pinto CW, Toro RC, Mansilla KH, Castro TA, Fuente-Alba CS. Crossed testicular ectopia. J Ultrasound Med 2010;29(5):847-849.
4. Chen KC, Chu CC, Chou TY. Transverse testicular ectopia: preoperative diagnosis by ultrasonography. *Pediatr Surg Int* 2000; 16(1-2):77-79.
5. Tasian GE, Copp HL. Diagnostic performance of ultrasound in nonpalpable cryptorchidism: a systematic review and meta-analysis. *Pediatrics* 2011;127(1):119-128.
6. Zuckerman JM, Upadhyay J. Crossed-fused testicular ectopia: a case for the use of laparoscopy to evaluate nonpalpable testicles. *J Pediatr* 2012;160(5):879.
7. Balaji KC, Diamond DA. Laparoscopic diagnosis and management of transverse testicular ectopia. *J Urol* 1995;46:879-880.