



## CROSSED TESTICULAR ECTOPIA: REPORT OF TWO CASES

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### ABSTRACT:

Crossed testicular ectopia also called transverse testicular ectopia (TTE) is very rare congenital anomaly in which one testis migrate to the opposite hemiscrotum. Unlike the undescended testis, which occurs in approximately 1% of male children, it has been noted that fewer than 100 cases have been reported in the world literature.<sup>[1]</sup> The typical presentation of crossed testicular ectopia is ipsilateral inguinal hernia and contralateral undescended testis.<sup>[2]</sup> usually the diagnosis of TTE is made intraoperatively and the treatment of crossed testicular ectopia it can laparoscopic or surgical either extra-peritoneal or trans-septal operations. Here we reported two cases of TTE case 1 is about 2 years old boy presented with right enlarged scrotum with palpable of 2 masses on it, the diagnosis was made depending on clinical and U/S findings and trans-septal orchiopexy was done. Case 2 is about 3 years old male presented with left inguinal hernia and left undescended testis, diagnosis was confirmed by U/S. Surgery was done and accidentally two testis found in right side shared blood supply after that we did herniotomy and left side orchiopexy.

**KEYWORDS:** testis, undescended testis, cryptorchidism, testicular ectopia, orchiopexy.

### INTRODUCTION

Testicular Ectopia is the testis that take abnormal pathway through the body and located in unusual site. An ectopic testis accounts for about 10% of extrascrotal testes. Early correction is thought to be able to minimize the risk of infertility, although treatment below the age of 13 does not appear to reduce the risk of malignancy.<sup>[3]</sup>

The most common regions in descending order are superficial inguinal pouch (Denis Browne pouch), perineum, femoral canal, contralateral scrotum and prepenile region.<sup>[4]</sup>

Crossed Testicular Ectopia is rare congenital anomaly in which both testis descend through a single inguinal canal or hemiscrotum.

Unlike the undescended testis, which occurs in approximately 1% of male children, it has been noted that fewer than 100 cases had been reported in the world literature.<sup>[1]</sup>

The typical presentation of crossed testicular ectopia is ipsilateral inguinal hernia and contralateral undescended testis.<sup>[2]</sup>

Here we reported two cases of crossed testicular ectopia, the first one is 2 years old male presented with right enlarged scrotum that confirmed by examination and U/S and after that surgery was done. The second case is about 3 years old male presented with left inguinal hernia and left undescended testis, accidentally during the surgery two testis were found in right side shared blood supply after that herniotomy and left side orchidopexy were done.

### CASE REPORT

#### Case 1

2 years old male presented to our clinic complain of right enlarged scrotum which is painless with normal skin over it. Patient sought medical advice several times before and then refers to our clinic.

Upon physical examination both scrotum looks well developed but the right side was enlarged, irregular shape and the left one looks empty. On palpation there was left empty scrotum, but on the right side there were 2 palpable masses oval in shape regular not tender, diagnosis of testicular ectopia was made and confirmed by U/S.

During the surgery we found double testis on the right side with the single spermatic cord, mid line scrotal incision was done then we did tunneling through the mid line between the two scrotums after that we put each single testis in its correct side of the scrotum.

#### Case 2:

3 years old male presented to our clinic with left inguinal hernia and left undescended testis.

On examination there was +ve cough impulse which confirmed left inguinal hernia and upon palpation there was left empty scrotum.

U/S abdomen and scrotum was done which confirmed the presence of the left inguinal hernia, left empty scrotum with presence of intra-abdominal testis, the right scrotum was well developed with normal right testis situated in the right on it.

Surgery was done and accidentally two testis found in right side shared blood supply, one of them situated in the normal position and the other one was in the right side intra-abdominal, after that we did herniotomy and left side trans-septal orchiopexy.

#### DISCUSSION

Crossed testicular ectopia is very rare form of testicular ectopia. It was first reported by VonLenhossek in 1886.<sup>5</sup> More than 100 cases have been reported in the literature.<sup>6</sup> Our study is the 3<sup>rd</sup> study that reported in Sudan, and we came through the literature review and we did not find any case reported in other African countries.

The exact cause of it is unknown but there were many theories have been reported. Berg proposed the possibility of the development of both testes from the same genital ridge.<sup>7</sup> Kimura concluded that if both vasa deferentia arose from one side, there had been unilateral origin but if there was bilateral origin, one testis is had crossed over.<sup>8</sup> Gupta and Das postulated that adherence and fusion of the developing Wolffian ducts took place early, and that descent of one testis caused the second one to follow.<sup>9</sup>

The mean age at presentation is 4 years. The clinical presentation generally includes an inguinal hernia on one side and a contralateral or sometimes a bilateral cryptorchidism.<sup>10,11</sup> The patients in our study were much younger than the usual age of presentation which they were 2 and 3 years old with features typical to the clinical presentation of TTE in case 2.

Gauderer et al. described a classification system for crossed testicular ectopia based on the presence of associated abnormalities: Type 1, the most common type (40-50%), is associated with inguinal hernia alone; Type 2 (30%) is associated with persistent or rudimentary Mullerian duct structures; and Type 3 (20%) is

associated with other genitourinary abnormalities without Mullerian remnants. Mullerian duct remnants, duplication of ductus deferens and other anomalies have also been reported.<sup>12</sup> In our study the first case was pure crossed testicular ectopia and case 2 can be classified as type 2 testicular ectopia because it associated with inguinal hernia.

The diagnosis of Crossed testicular ectopia is usually not made preoperatively like the case 2 in this study which is discovered intraoperatively, but in case 1 we made the diagnosis preoperatively depending on physical examination and U/S findings. The diagnosis of TTE can be made preoperatively by using ultrasonography by an experienced sonologist.<sup>13</sup> Recently, USG, laparoscopy, and magnetic resonance imaging (MRI) have been used for the diagnosis of this condition.<sup>14,15,16</sup>

Patients with TTE are at increased risk of malignant transformation. In fact, the overall incidence of malignant transformation of gonads is 18%.<sup>17</sup>

In 2% to 97% of patients with crossed testicular ectopia, disorders of the upper and lower urinary tract system have been reported.<sup>18</sup>

Management for testicular ectopia is either trans-septal or extra-peritoneal transposition orchiopexy, a search for Mullerian remnants and other anomalies, and long-term postoperative follow-up.<sup>19</sup>

As best practice surgery should take place between 3 and 6 months and definitely before 1 year as per guidelines from British Association of Pediatric Urologist.<sup>20</sup>

Trans-septal orchiopexy was been done in the two cases of this study, which is usually the preferred surgical option.

Laparoscopic guide can be helpful, while performing the transseptal orchidopexy.<sup>21</sup>

#### CONCLUSION

The two cases reported in this study presented with unusual presentation of TTE such as the presence of palpable of two testes in one scrotum, the inguinal hernia with ipsilateral cryptorchidism. Trans-septal orchiopexy is highly recommended treatment for TTE as we did in this study. Also the laparoscopic management is useful in both treatment and diagnosis of TTE.

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