IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 21, Issue 7 Ser.3 (July. 2022), PP 51-55
www.iosrjournals.org

Crossed Testicular Ectopia-A Case Report

Dr MD Meraj [1] , Dr R Pratyusha [2],Dr K E Vijaykumar gowd [3], Dr N L N Moorthy [4];

Department of Radiodiagnosis, Apollo Institute of Medical Sciences and Research, Jubliee hills,Hyderabad,Telangana-500093.

[1)]Dr MD Meraj,Assistant Professor,Radiodiagnosis
[2)]Dr R Pratyusha, Resident, Radodiagnosis
[3)] Dr K.E. Vijaykumar gowd, Assistant Professor,Radiodiagnosis
[4)] Dr N L N Moorthy,Professor and HOD,Radiodiagnosis
Dr MD Meraj, Assistant Professor,Radiodiagnosis,
CORRESPONDING AUTHOR: 2) Dr R Pratyusha, Resident, Radodiagnosis,

Abstract: *Crossed testicular ectopia is a rare anomaly of testicular descent, in which both testis lie on the same side .it is usually associated with other genitourinary anomalies. We report a case of crossed testicular ectopia in an 8yr old boy who presented left inguinal hernia. Diagnosis was made on USG and MRI which was surgically confirmed.*

Keywords: *ectopic , inguinal hernia.*

Date of Submission: 08-07-2022 Date of Acceptance: 22-07-2022

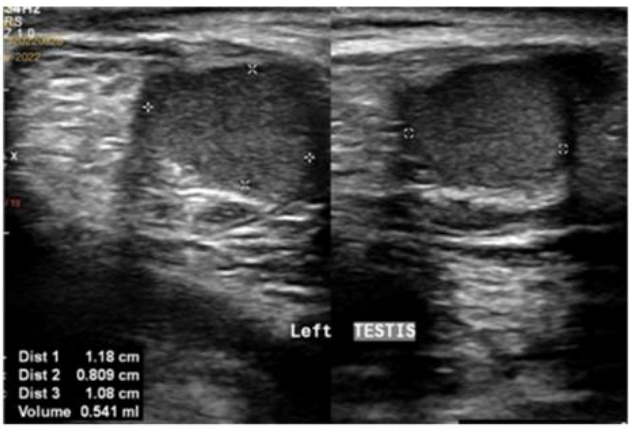
I. Introduction:

The various anomalies of testicular descent are broadly classified into undescended testis and ectopic testis. Under ectopic testis, the least common is that of crossed type. When present it has other associations. We discuss a case of crossed testicular ectopia in an 8yr old boy with left congenital indirect inguinal hernia and review literature and the management.

II. Case Report:

An 8yr old third order male child was brought to the OPD with complaints of swelling in the left inguinal region .The parents notices the presence of a single testis in the scrotum when the child was 2 yrs old, however did not seek medical help for the same. The child was born by normal vaginal delivery at term with no birth related illness. On clinical examination the child was found to have disproportionate short stature with empty right scrotum and left inguinal hernia. The swelling increased in size during crying and coughing. External genitalia were of male type with normal appearing urethral meatus. Past medical and surgical history was negative.

USG findings; Left testis measured 11x10x3mm and was visualized in left hemiscrotum. Left testis appeared normal in size, echotexture and Color flow. No evidence of any focal lesions in left testis. Epididymis appeared normal on left side. Right scrotal sac was empty. Left indirect inguinal hernia noted with omentum as herniating content at deep inguinal ring measuring 8.5mm.No evidence of fluid collection in both scrotal sacs. A well defined hypoechoic mass similar in echogenecity to left testis was visualized in the pelvis located anterolaterally to the urinary bladder on left side raising suspicion of ectopic right testis. (Fig 1&2)



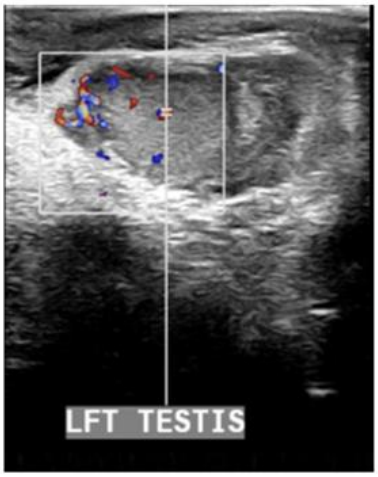


FIGURE 1: USG scrotum showing left testis in the left hemiscrotum and color uptake on doppler.

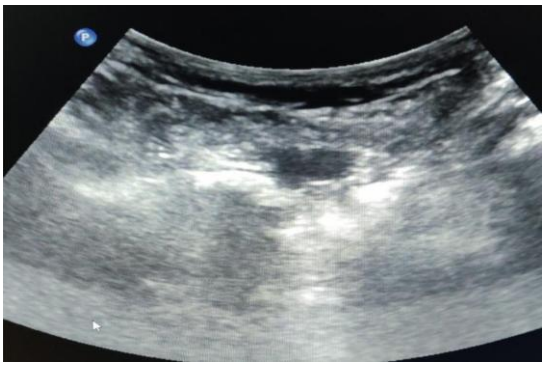


FIGURE 2: Image showing hypoechoic mass in the pelvis near urinary bladder.

*MRI ABDOMEN findings:*Left inguinal canal was dilated with patent processus vaginalis -non obstructive, non strangulation inguinal hernia with omentum as herniating content. Left testis appears normal measuring 1.5x1.0cm. Right testis not visualised in right scrotal sac. T1 intermediate intense/T2 , PDW, SPAIR hyper intense oval soft tissue with attached linear cord like structure noted measuring 1.4x0.8cm in antero lateral aspect of bladder on left side-likely right testis. 0.6cm defect noted in left inguinal region with omentum as herniating content. A diagnosis of crossed ectopic testis was made (Fig 3 ,4, 5).

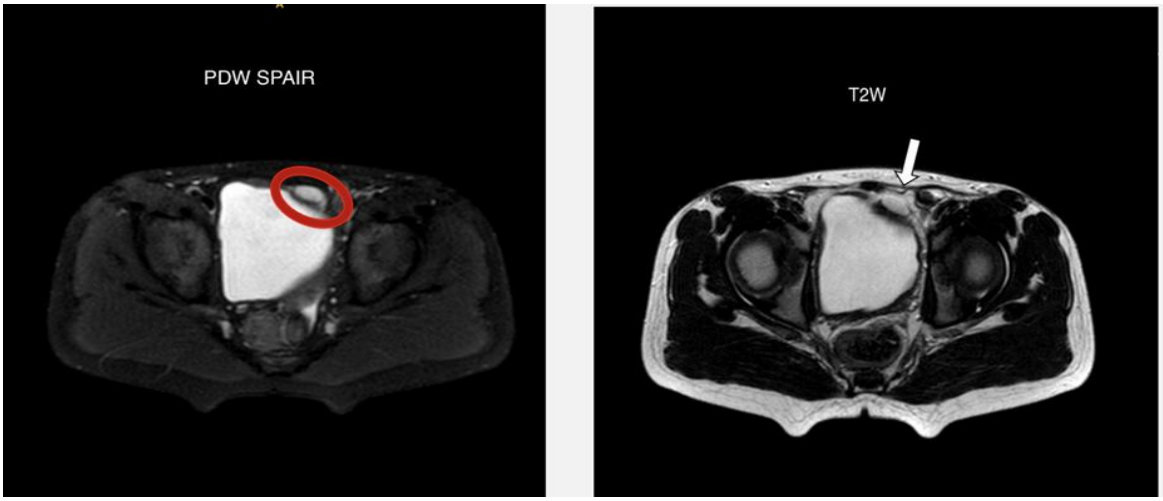
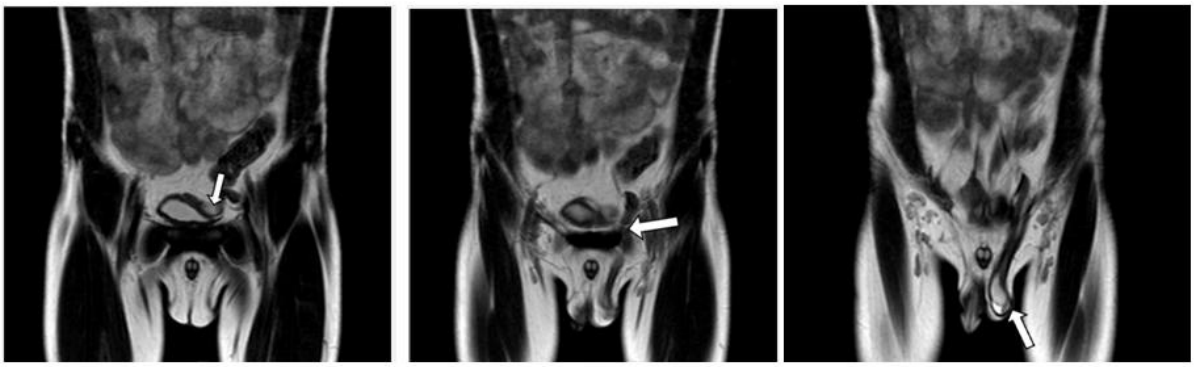


FIGURE 3: Axial T2 and PDW SPAIR images showing the right testis located antero-lateral to the urinary bladder on left side (red circle in PDW image and white arrow in T2 weighted image showing the testis).



4a 4b 4c

FIGURE4: Coronal T2 weighted images: white arrows in the 4a ,4b and 4c images showing right ectopic testis, patent processus vaginalis on left side and left testis in left hemiscrotum respectively.

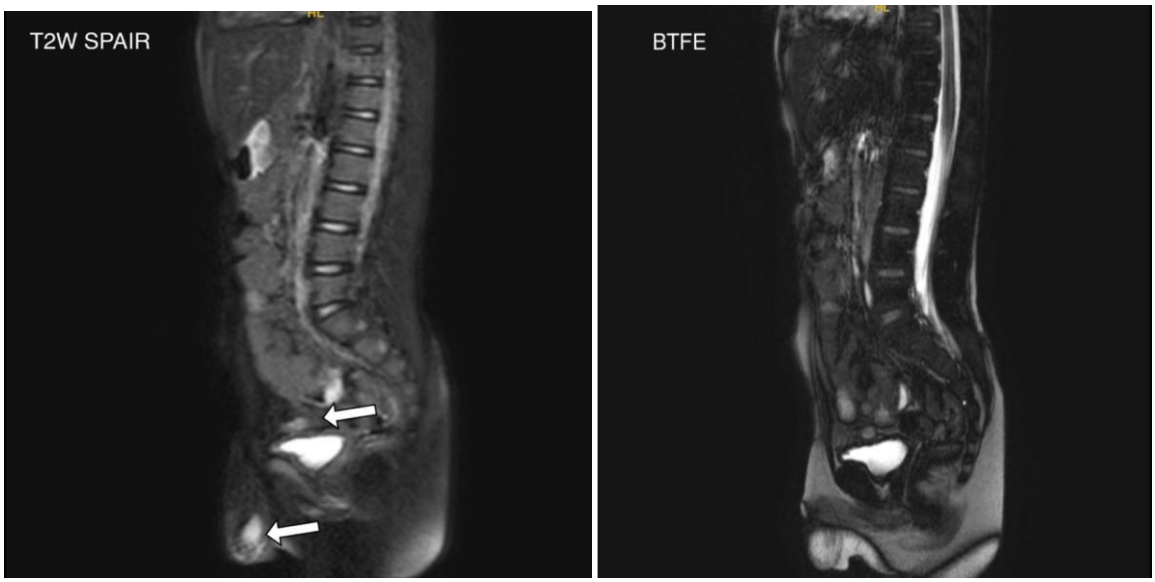


FIGURE 5: Saggital sections in T2 weighted SPAIR and fast echo sequences showing similarly intense right and left testis located on the same side-confirming crossed ectopic testis.

On surgery, both testes were found on left side, the normal looking right testis in left side of pelvis adjacent to bladder and left testis in the left hemiscrotum, both connected by a fibrous band. The fibrous band was released and bilateral orchidopexy was done .The right testis was placed and fixed in right hemiscrotum and left in left hemiscrotum. Hence the radiological diagnosis was confirmed laparoscopically (Fig 6, 7)

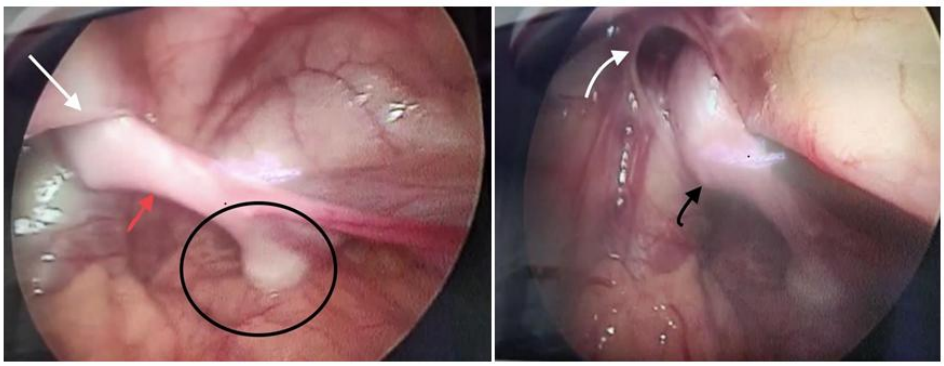


IMAGE 6:The image on the left showing the left deep inguinal ring(white arrow),the ectopic right testis(black circle) and fibrotic connection extending from the right testis into the left inguinal canal up to left testis(red arrow).The image on the right showing the left deep inguinal ring (white arrow) and fibrotic band (black arrow)passing through it .

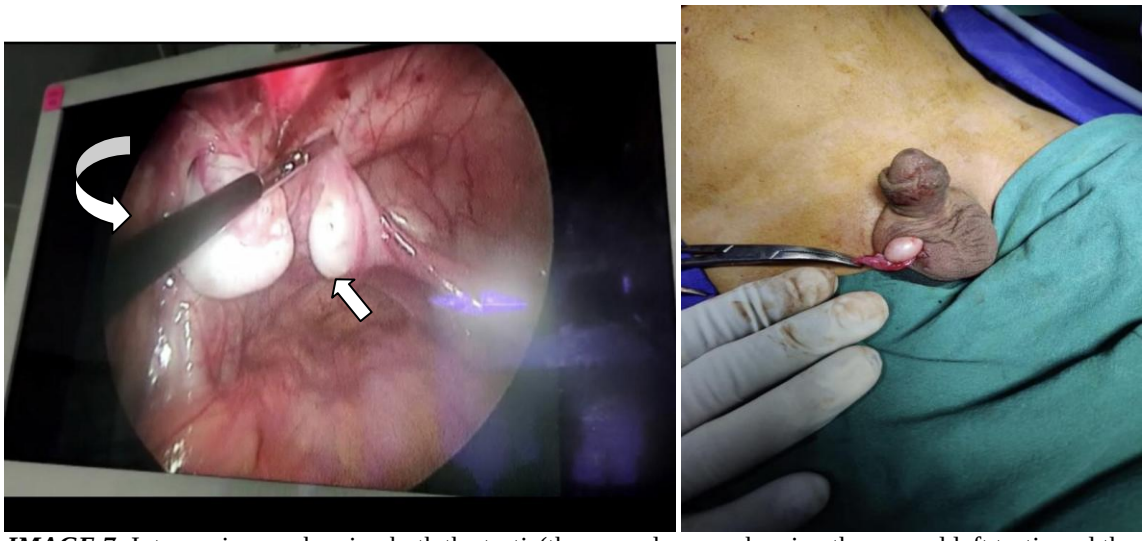


IMAGE 7: Intra op image showing both the testis(the curved arrow showing the normal left testis and the straight arrow the ectopic right testis) after the fibrous band was released and the right image showing right testis post orchidopexy.

Post op ultrasound showed right testis in right hemiscrotum, showing normal colour uptake on Doppler.

III. DISCUSSION:

ECTOPIC TESTIS: Based on incidence, the most common to least common sites of ectopic testis are Superficial inguinal pouch, perineum/anterior to root of penis, femoral triangle/upper thigh and contra lateral scrotum.

CROSSED TESTICULAR ECTOPIA:

Rare form of urogenital anomaly in which both testis are migrated and descend through a single inguinal canal , one or both testis may be ectopic in abdomen ,inguinal region or descend to hemiscrotum with empty contra lateral hemiscrotum. It is deviation of testicular descent resulting in unilateral location of both testes. Also called testicular pseudo duplication, unilateral double testis and transverse aberrant testicular maldescent.

Though the occurrence of crossed testicular ectopia is very rare, when present it is usually associated with other anomalies .Based on these associations ,GAUDER ET AL classified crossed testicular ectopia into 3 major types [1]**:** TYPE I: most common, only associated with inguinal hernia (40-50%) TYPE II: associated with persistent /rudimentary mullerian canal remnants (30%)TYPE III: associated with genitourinary anomalies other than persistent Mullerian duct like hypospadias, seminal vesicle cyst, horse shoe kidney, bilateral renal dysgenesis, pyelonephritis urethral junction obstruction, pseudo hermaphroditism, etc (20%)

ETIOLOGY: exact etiology is undefined, but has been speculated to result from abnormal inguinoscrotal descent of ectopic testis.Other postulated theories include: Kimura [2] stated that true CTE occurs only if there are two distinct deferent ducts, and a common duct suggests the development of the testis from one genital ridge, Anomalous origin of both testis from same genital ridge[3] ,early adherence and fusion of developing wolffian ducts[4] ,Origin of both vas defers from one side , Frey and Rajfer [5] noted that defective ipsilateral gubernacular development might predispose to crossed testicular ectopia.

Direct relationship is proven to exist between testicular ectopia and development of gubernaculum. [6]

EPIDEMIOLOGY:

1st case of crossed testicular ectopia was reported by Sir Lenhossek in the year 1886 [7]

Since then less than 150 cases have been reported in published studies.

TREATMENT /MANAGEMENT GUIDELINES**:** [6]

Primary goal is to preserve fertility and prevent malignancy. Treatment is based on associated congenital anamolies. Treatment of choice:if adequate length of spermatic cord is present,trans-septal orchidopexy /extra peritoneal transposition orchidopexy is advised .

Orchidectomy should be reserved for cases where ectopic testis cannot be mobilised to a palpable position given the risk of malignancy.In case of mullerian defects ,remnants preservation is recommended as to preserve blood supply to vas defers and testis and as remnants have shown to lack malignant potential.Karyotyping may be required in case of associated congenital anomalies .in case of true CTE,the karyotype is always 46XY. If fusion of vas defers is present,trans-septal orchidopexy is recommended.

FOLLOW UP:requires long term follow up as testis is retained and hence carries risk of development of malignancy and for future fertility problems. Testicular cancer risk increases by 6 fold in cryptorchid cases whose operation is delayed until after 10-11 years. Overall incidence of malignant transformation is 18%[8].there have been reports of embryonal carcinoma[9],Seminoma,yolk sac tumour [10]and Teratoma [8]

IV. Conclusion:

Though transverse testicular ectopia is rare anomaly ,it should be considered a differential diagnosis in patients with absent testis /infertility and detailed imaging should be employed. Pre op localisation of impalpable testis ,analysis of vas and seminal vesicle helps vastly in decision making as in which surgical technique is to be employed .

Pre op localisation can be done using USG,MRI,Laparoscopy,venography and arteriography in case of very small testis. [11]MRI has 82.4% and MRV has 100% sensitivity in diagnosis. [11]

FUNDING:none.

CONSENT: informed consent was taken from the family for reporting the case and accompanying images.

References:

[1]. Salah, Sami E.E.; Elhaj, Khalid I.; Awadelseed, Yasir O.M.; Mohammed, Sami G.E.E. Crossed testicular ectopia, *Annals of Pediatric Surgery:* October 2016 - Volume 12 - Issue 4 - p 170-172
[2]. Kimura T. TRANSVERSE ECTOPY OF THE TESTIS WITH MASCULINE UTERUS. *Ann Surg*. 1918 Oct;68(4):420-5.
[3]. doi: 10.1097/00000658-191810000-00009. PMID: 17864003; PMCID: PMC1426888.
[4]. Berg AA. VIII. Transverse Ectopy of the Testis. *Ann Surg*. 1904 Aug;40(2):223-4.
[5]. PMID: 17861500; PMCID: PMC1425736.
[6]. Von Lenhossek MN. Ectopia testis transverse. *Anat Anz* 1886; 1:376–381.
[7]. Frey HL, Rajfer J. Role of the gubernaculum and intraabdominal pressure in the process of testicular descent. *J Urol.* 1984 Mar;131(3):574-9. doi: 10.1016/s0022-5347(17)50507-8. PMID: 6700007.
[8]. Ben Dhaou M, Louati H, Kotti A, Zitouni H, Jalouli M, Mhiri R. Diagnosis and Treatment of Crossed Testicular Ectopia. *Iran J Public Health*. 2016 Sep;45(9):1232-1233. PMID: 27957472; PMCID: PMC5149481.
[9]. GUPTA RL, DAS P. Ectopia testis transversa. *J Indian Med Assoc*. 1960 Dec 16;35:547-9.
[10]. PMID: 13709818.
[11]. Berkmen F. Persistent müllerian duct syndrome with or without transverse testicular ectopia and testis tumours. *Br J Urol*. 1997 Jan;79(1):122-6. doi: 10.1046/j.1464-410x.1997.27226.x. PMID: 9043511.
[12]. Melman A, Leiter E, Perez JM, Driscoll D, Palmer C. The influence of neonatal orchiopexy upon the testis in persistent Müllerian duct syndrome. *J Urol*. 1981 Jun;125(6):856-8. doi: 10.1016/s0022-5347(17)55233-7. PMID: 6113287.
[13]. Eastham JA, McEvoy K, Sullivan R, Chandrasoma P. A case of simultaneous bilateral nonseminomatous testicular tumors in persistent müllerian duct syndrome. *J Urol*. 1992 Aug;148(2 Pt 1):407-8. doi: 10.1016/s0022-5347(17)36614-4. PMID: 1353118.
[14]. Shakir Saleem Jabali, Ayad Ahmad Mohammed,Crossed testicular ectopia: Case report with review of literature,*International Journal of Surgery Case Reports*,Volume 75,2020,Pages 189-192,ISSN 2210-2612,

Dr MD Meraj, et. al. "Crossed Testicular Ectopia-A Case Report." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 21(07), 2022, pp. 51-55.