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Case Report

Unique Anomalies of Vas Deferens; A Case Series from Upper Egypt

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Abstract

Background: There are multiple variants of the anomalies of the vas deferens which may not be recognized, resulting in increased chances of intra-operative injury and subsequent complications.

Case series: We have 3 cases with unique anomalies of the vas deferens; the first case was Crossed testicular ectopia with union right vas deferens with the left vas deferens. The second case has absent distal part of the right vas deferens. The third case has absent proximal 2 cm of the vas deferens.

Conclusion: Different anomalies of the vas deferens can be discovered accidentally during routine inguinal surgical procedures. Awareness of the surgeon about these anomalies can reduce intra-operative injury to the vas deferens and subsequent complication.

Introduction

Congenital anomalies of the vas deferens are frequently encountered by the pediatric and urological surgeon during a routine inguinal surgical procedure. It is reported that vas deferens anomalies affect about 0.05% of the general population [1]. There are infinite variations of the anomalies of the vas deferens classified as absence, duplication, ectopia, hypoplasia, and diverticulum [2,3].

In addition, care should be taken in cases of anomalies of the vas deferens because it can be accompanied with non-testicular genitourinary anomalies such as unilateral renal agenesis and cystic fibrosis [1-4]. Those with CF-mediated vasal agenesis probably suffered some insult to the vas deferens only. Those with renal and vassal agenesis, however, may have an intrinsic Wolffian defect, which caused complete developmental failure of the duct [5]. Here we report 3 cases of different anomalies of the vas deferens discovered accidentally during routine orchidopexy and herniotomy procedure. We used a definition of congenital vanished of the vas deferens that reflects maldevelopment of any unreconstructable segment of the vas deferens.

Case report 1

A 2 year old male child had bilateral undescended testes, a left testis was palpable at inguinal region but a right testis was not palpable. The child operated by an experienced pediatric surgeon for left orchidopexy at Pediatric Surgery Unite, Assiut University Hospital, Egypt. During routine left groin incision for left palpable undescended testis, the right impalpable testis was accidentally discovered at left inguinal region accompany with the left testis (crossed testicular ectopia). Dissection of both testes from the left side and from the supra penile area did. Right and left testes and two epididymis were well developed with average size (2 cm x1.2 cm – 1.5 cm x 1.7cm) for left and right testes respectively.

During surgery, we discovered vanished (become as fleshy fiber) proximal part of the right vas deferens 1 cm away from the right well developed epididymis, distal (proximal) since the direction of sperm movement is from the epididymis (proximal) to the prostate distal. The right vas deferens meet and union with the left vas deferens. The total length of the right vas deferens is about 7 cm long. The left vas deferens found normal developed and the right vas deferens unit with it after 5 cm from its origin from the left well developed epididymis (Figure 1). Bilateral orchidopexy did with subdartous fixation of both testes at right and left scrotal compartments.

A laparoscopic assessment was done at the same session referred well developed pelvic part of the left vas deferens and absent pelvic part of the right vas deferens.

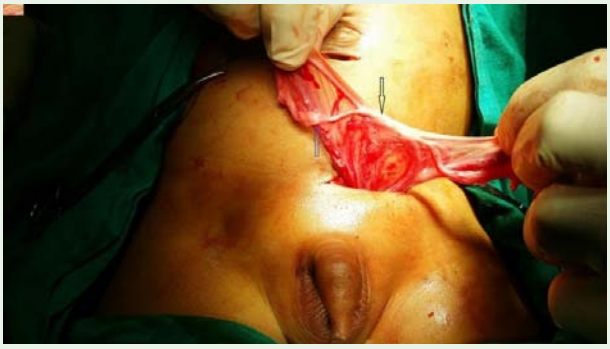

Figure 1: Black arrow show union between right and left vasa deferentia, blue arrow show vanished (become a fleshy fiber) right vas deferens.

Abdominal ultrasound referred no associated kidneys anomalies or any other anomalies. Genetic analysis for Cystic Fibrosis Transmembrane Regulator (CFTR) mutations tests not analyzed due to poor resources of our hospital. There is no family history of the similar condition, no antenatal maternal drug use or radiation exposure.

Assurance of the parents did for the presence of other normal left vas deferens (Figure 1).

Case report 2

During routine herniotomy to an 11 years old male child at Aswan University Hospital, the surgeon discovered vanished (absent) the distal part of the right vas deferens about 4 cm from its origin with the normal well developed epididymis and testis, distal since the direction of sperm movement is from the epididymis (proximal) to the prostate (distal). The laparoscopic assessment confirmed absent pelvic part of the right vas deferens, normal present pelvic part of the left vas deferens.

Abdominal ultrasound showed no associated kidney anomalies. No sweat chloride test, or genetic analysis for Cystic Fibrosis Transmembrane Regulator (CFTR) mutations test done due to poor resources of our hospital. No family history of the similar condition, but he had a brother complained of undescended testes

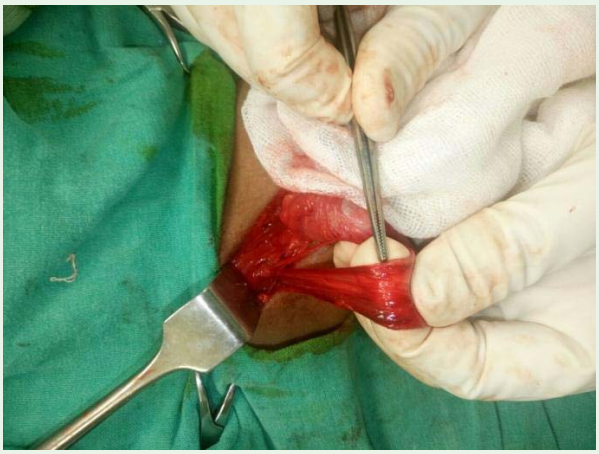

Figure 2: Absent distal part of the vas deferens.

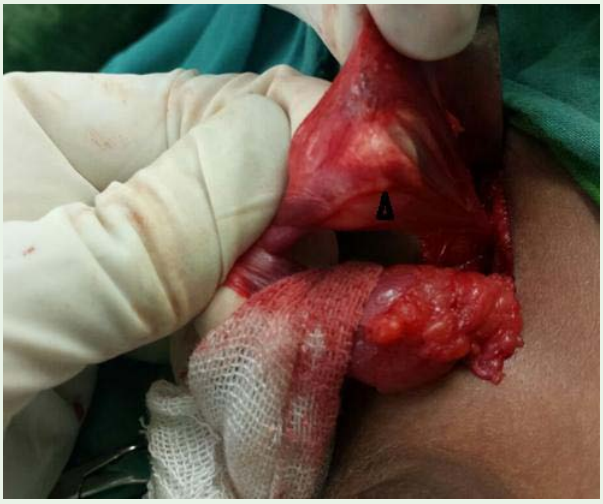

Figure 3: Absent (vanished) distal part of the vas deferens after 4 cm from its origin with the epididymis.

operated outside our hospital. The parent of the patient assured for the presence of other vas deferens. The postoperative course was uneventful (Figures 2 and 3).

Case report 3

An 8 year old boy underwent surgery for an undescended left testis at Assiut University Hospital, Egypt. At operative intervention, we discovered an absent proximal part of the left vas deferens; its origin began 2 cm away from the normal develops epididymis. Laparoscopy was performed and confirmed present both pelvic part of the right and left vasa deferentia. Left orchidopexy was done by an experienced pediatric surgeon with subdartous fixation.

Abdominal ultrasound referred no associated kidneys anomalies. No genetic analysis or sweat chloride test done due to poor resources of our hospital. The child had no significant family or antenatal history. Unfortunately, we have missed intraoperative photography for this case.

Discussion

In cases of congenital anomalies of the vas deferens the anatomic variant may not be recognized, resulting in increased incidence of intra-operative injury and subsequent complications. Injury to the vas deferens during surgery may cause infertility, chronic pain, and spermatic granulomas [6]. Therefore, pediatric surgeons performing inguinal procedures should be well aware of the condition to reduce vas deferens injury and to assure the parents of the patient about the suspected fertility of their child with an availability of different assisted reproductive techniques. Intra-operative Doppler can be helpful in the differentiation of the vas deferens from other structures such as the spermatic arteries and veins [7].

The vas deferens developed from the central portion of the mesonephric duct and acquired a thick, muscular wall [8]. There is theory suggests that transverse division of the mesonephric duct during organogenesis causes the duplication of the vas deferens [9] but no theory suggests for vanished vas deferens, we hypothesize a suggestion of intrauterine vascular accident to the absent whole

length or a part of the vas deferens. Up to date no trial has done about the ability to anastomosing of the vanished part of the vas deferens.

Conclusion

Different anomalies of the vas deferens can be discovered accidentally during routine inguinal surgical procedures. Awareness of the surgeon about these anomalies can be reduced intra-operative injury to the vas deferens and subsequent complication. There is a defect in theories of the embryogenesis of the anomalies of the vas deferens; multiple research need to output the conclusion.

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