

# Unilateral Renal Agenesis Associated with Partial Epididymis and Vas Deferens Agenesis in a Patient with Abdominal Testicle

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## ABSTRACT

This study considers a unilateral renal agenesis associated with agenesis of the epididymis body and tail and the vas deferens and non-palpable left testicle in a 20-month-year-old patient. During laparoscopic procedure, the testicle was positioned at approximately 5 cm above the inguinal ring. The size was appropriate for the age and the head of the epididymis was situated in its normal position. The decision was made to perform the first step of the Fowler-Stephens' surgery and the patient presented a good evolution. The association of male duct system agenesis with unilateral renal agenesis in a patient with cryptorchidism diagnosed by laparoscopy is an extremely rare event, however generally in these cases the testicle is of normal size, presents unaltered hormonal function, and must be preserved.

*Key words: testis; cryptorchidism; kidney; urogenital anomalies*  
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## INTRODUCTION

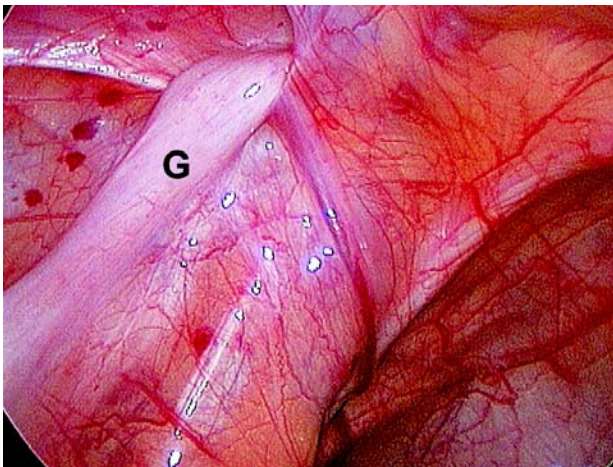
Urinary and genital systems originate in the intermediary mesoderm located along the posterior wall of the abdominal cavity between the fourth and the tenth week post-conception (1). Alterations in this development before the fourth week can lead to unilateral agenesis of the genitourinary structures (1).

The occurrence of duct anomalies (epididymis, vas deferens, ejaculatory ducts and seminal vesicles) is very frequent in infertile patients and in cryptorchidism (1,2). However, reports of partial agenesis of the epididymis associated with vas deferens and renal agenesis in patients with abdominal testicle is extremely rare. The objective of the present article is to discuss the occurrence of unilateral renal and genital duct agenesis in a patient with an abdominal testicle located during a laparoscopic diagnosis procedure.

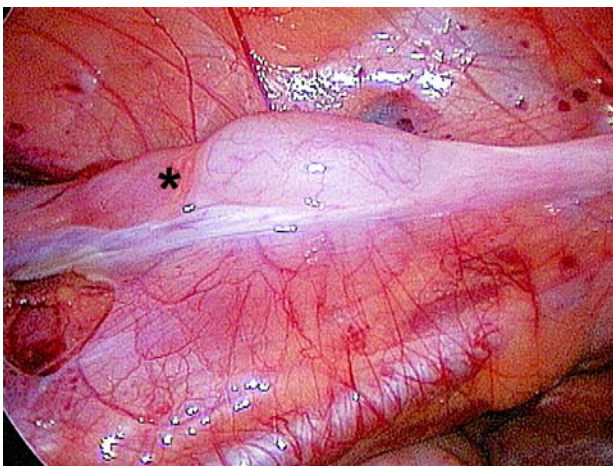
## CASE REPORT

We discuss the case of a twenty-month-old patient with a non-palpable left testicle and topic right testicle of normal size for his age who presented no other significant alterations during the physical exam. An abdominal ultrasound showed the left testicle in an intra-abdominal position. The patient was submitted to laparoscopic orchidopexy, which revealed the left testicle situated around 5 cm above the internal inguinal ring.

During the procedure, we noticed the absence of the left vas deferens (Figure-1) and agenesis of the epididymis body and tail (Figures-2 and 3) and also of the left kidney. The epididymis head was in its normal situation (Figure-2). As the testicle was of a normal size, we decided to perform the Fowler-Stephens surgery in 2 steps – clamping of the spermatic vessels first with the second step (orchidopexy)



**Figure 1** – Laparoscopic view of the internal inguinal ring. We observe the testicular gubernaculum and vessels crossing the inguinal ring; the deferent duct is not identified. G = gubernaculum.

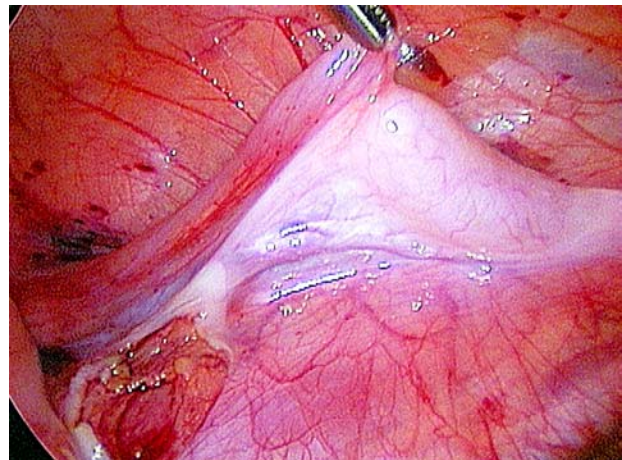


**Figure 2** – Laparoscopic view of the left testicle where we observe the epididymis head (\*).

after 6 months. The patient evolved well and was discharged the day after the procedure.

## COMMENTS

Anomalies of the epididymis and the vas deferens can be divided into 2 groups: (a) anomalies associated with cryptorchidism and (b) anomalies observed during infertility investigations. Anomalies of



**Figure 3** – Laparoscopic view of the left testicle. When we were mobilizing the testicle, we noticed the absence of the epididymis body and tail.

the epididymis are associated with cryptorchidism in 36 to 72% of cases (2); however, the existence of epididymis agenesis is one of the rarest epididymis anomalies (2).

Partial agenesis of the epididymis with its head in the habitual position can be explained by alterations in vascularization during the period of mesonephric tubules development before its fusion with the testicular tubules (3).

Renal anomalies in cryptorchidism present an incidence rate similar to the general population, with renal agenesis being one of the most common (1). Of patients with unilateral renal agenesis, 10 to 15% present genital anomalies, and of these patients with genital anomalies, the testicle is generally normal with an occurrence of partial agenesis of the epididymis and of the deferent in 50% of cases (1). In rare cases of cryptorchidism where there is a renal and epididymis agenesis, the testicle generally is normally sized and presents unaltered hormone function, therefore, must be preserved, even though the reproductive function is compromised.

## CONFLICT OF INTEREST

None declared.

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