

Tubular Ectasia of the Rete Testis: Two Cases at Bouaké University Hospital

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Abstract

Tubular Ectasia of the Rete Testis (TERT) is a disorder of the Rete Testis (RT) in which numerous benign cysts are present. It is a rare benign entity with a typical ultrasound appearance of clusters of small anechoic structures at the confluence of the testicular hilum. The importance of this condition lies in establishing an adequate differential diagnosis to avoid orchietomy. Objective: To describe the ultrasound features of TERT cases diagnosed in the ultrasound unit of the Radiodiagnosics and Medical Imaging Department at Bouaké University Hospital. Patients and observations: Two men aged 56 and 49 were referred by peripheral health centres for a scrotal ultrasound scan due to progressive swelling of the right scrotum and a feeling of heaviness in the left scrotum, respectively. There was no pain or fever, and no history of trauma or scrotal surgery. The scrotal ultrasound revealed that the first patient had a normal-sized right testicle with multiple thin-walled, confluent anechoic formations centred on the testicular hilum. The absence of Doppler signal and testicular dysmorphia ruled out other intra-testicular pathologies. In addition, the right epididymis was heterogeneous with a sessile hydatid and a right hydrocele. The second patient had a normal-sized left testicle with the same lesions. In addition, he had an epididymal cyst and a minimal left hydrocele. Conclusion: TERT is a rare benign condition that generally occurs in individuals over the age of 45 and may occur alone or in association with other lesions. The diagnosis made by ultrasound coupled with Doppler must be known in order to avoid unnecessary surgical exploration.

Keywords

Ultrasound, Doppler, Scrotum, Rete Testis Ectasia, Bouaké

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1. Introduction

The Rete Testis (RT) is an anastomosed network of delicate tubules located in the hilum of the testis that transports sperm from the seminiferous tubules to the efferent ductules. Rete testis tubular ectasia (TERT) is a disorder of the RT in which numerous benign cysts are present. It is a rare benign condition with a typical ultrasound appearance of clusters of small anechoic structures at the confluence of the testicular hilum [1]. It is most often asymptomatic and discovered incidentally on ultrasound. The importance of this condition lies in establishing an adequate differential diagnosis to avoid orchiectomy [2]. In this report, we describe two cases of tubular ectasia of the rete testis diagnosed in the ultrasound unit of the Radiodiagnostics and Medical Imaging Department at Bouaké University Hospital.

2. Patients and Observations

2.1. Case 1

A 56-year-old man was referred by a peripheral health center for progressive swelling of the scrotum without pain, fever, history of trauma to the scrotum, or previous scrotal surgery. The scrotal transillumination test was non-contributive, as the swelling was minimal and did not allow adequate light transmission to reliably differentiate between fluid and solid components.

High-frequency scrotal ultrasound showed testicles of normal size and echotexture. On the right side, multiple thin-walled, confluent anechoic tubular structures centered on the testicular hilum were observed (**Figure 1(A)**). Their pseudocystic appearance and posterosuperior hilar location were pathognomonic of TERT. Color Doppler imaging demonstrated no internal vascularization, and no solid mass, testicular distortion, or intratesticular calcification was identified, effectively excluding malignant pathology (**Figure 1(B)**).

The right epididymis appeared heterogeneous, suggestive of epididymitis (**Figure 1(A)**). A moderately abundant right hydrocele and a homolateral sessile hydatid were also noted (**Figure 1(C)**). The left testis, epididymis, and both spermatic cords were unremarkable.

2.2. Case 2

A 49-year-old man presented with a sensation of scrotal heaviness and no significant past medical history. High-frequency scrotal ultrasound demonstrated testicles of normal size and echostructure.

On the left side, multiple cystic tubular formations located at the rete testis were identified, consistent with TERT (**Figures 2(A)-(B)**). The epididymis was normal. A minimal left hydrocele was associated (**Figure 2(C)**).

The right testis and scrotal contents were entirely normal, as were both spermatic cords.

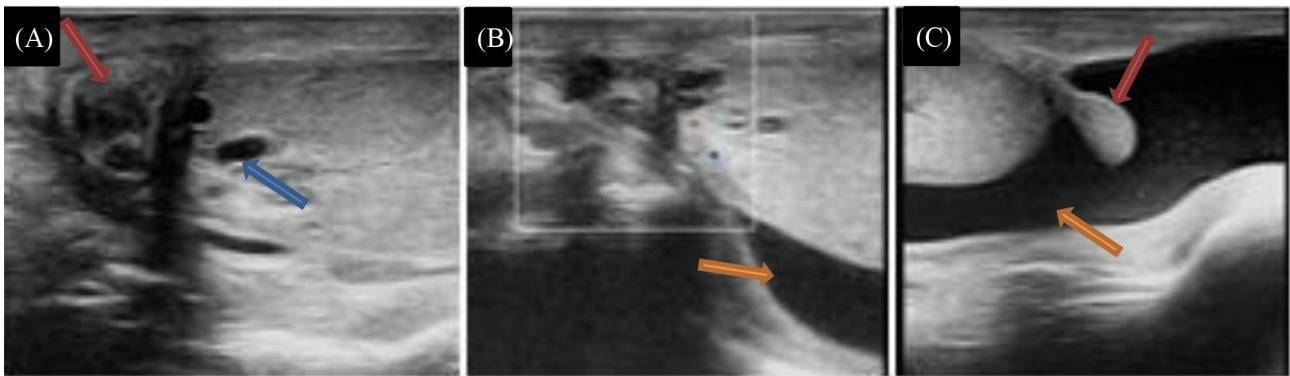


Figure 1. Right testicle. (A): Cystic ectasia of the rete testis (blue arrow) with a heterogeneous appearance of the epididymis (red arrow). (B): Absence of color Doppler signal from cystic formations with a vaginal hydrocele (orange arrow). (C): A sessile hydatid (red arrow) with a vaginal hydrocele (orange arrow).

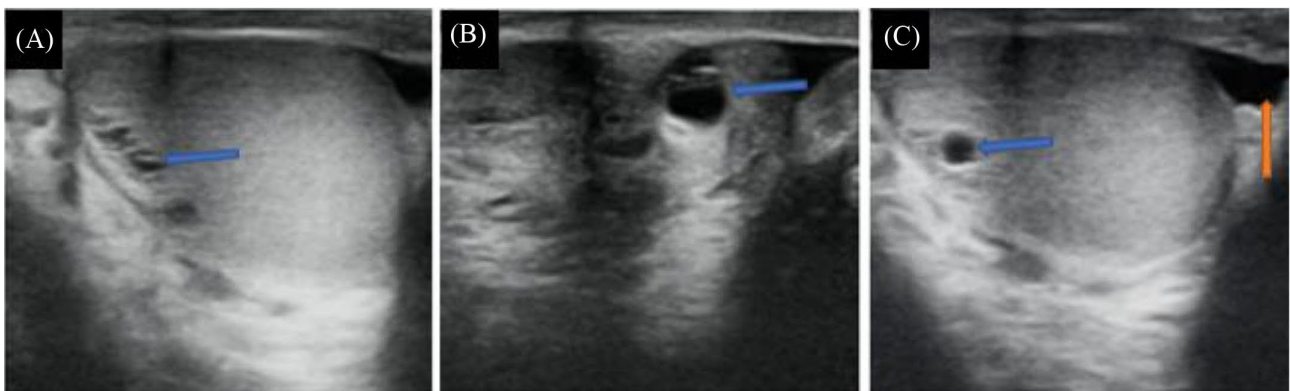


Figure 2. Left testicle. (A) and (B): Tubular and cystic ectasia of the rete testis (blue arrow), (C): Cyst of the rete testis (blue arrow) associated with minimal hydrocele (orange arrow).

3. Discussion

Tubular ectasia of the rete testis is a rare, benign condition predominantly affecting men over the age of 45 [1] [2]. It corresponds to cystic dilatation of the anastomosed channels of the rete testis within the mediastinum testis. Correct radiological identification is crucial to avoid unnecessary invasive procedures.

Although its exact prevalence remains uncertain, Nistal *et al.* reported an incidence of 1.6% in an American study of 2,316 autopsy and surgical specimens [3]. TERT is unilateral in approximately two-thirds of cases, though bilateral involvement has been described [1].

Several pathophysiological mechanisms have been proposed, including mechanical obstruction of the spermatic ducts, congenital malformation, ischemic degeneration, and hormonal factors [3]. The vascular hypothesis is widely accepted: age-related atherosclerotic changes may compromise the delicate arterial supply of the epididymis and rete testis, leading to ischemic degeneration [4]. Additionally, age-related androgen deficiency may induce epididymal atrophy and secondary obstruction, resulting in dilatation of the rete testis tubules [5].

On ultrasound, TERT exhibits a pathognomonic appearance: clustered, well-

defined, anechoic tubular structures centered on the testicular hilum, with no internal vascularization on color Doppler, and no solid components or calcifications [1] [4] [6].

In equivocal cases, additional imaging or biopsy should be considered when:

- Internal vascularization is detected;
- Solid components or irregular walls are present;
- Associated testicular distortion or rapid lesion growth is observed;
- Or when clinical findings are discordant.

In such situations, MRI can help confirm the benign cystic nature of the lesions by demonstrating well-circumscribed, non-enhancing cystic structures [7].

TERT is a stable lesion with no malignant potential, and once confidently diagnosed, requires no surgical treatment or specific follow-up [1] [4] [8]. Patient reassurance and clinical observation are sufficient. Our two cases illustrate the typical imaging features allowing safe, non-invasive diagnosis.

4. Conclusion

Tubular ectasia of the rete testis is a rare, benign condition typically occurring in men over 45 years of age, either isolated or associated with other scrotal abnormalities. High-frequency ultrasound combined with Doppler imaging allows accurate diagnosis. Familiarity with its characteristic imaging features enables clinicians to avoid unnecessary biopsy or surgical exploration.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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