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Ultrasound Findings of an Intratesticular Varicocele Consolidated with Extratesticular Varicocele

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Abstract

We reported a case of a 54-year-old male admitted to our department due to pain in his scrotal region, who was diagnosed extratesticular varicocele combined with intratesticular varicocele. B-mode scrotal ultrasound demonstrated extratesticular varicocele consolidated with intratesticular varicocele, and intravenous reflux signal appeared in Color Doppler. Intratesticular varicocele is an extremely rare condition with diverse ultrasonic manifestations, and Color Doppler ultrasound is conducive to confirm the diagnosis. Detection of components in testis is significant in the management of varicoceles, and ultrasound is the preferred method for diagnosis and follow-up.

Keywords: Varicocele; Extratesticular; Intratesticular; Ultrasound; Color doppler

Introduction

As one of the common causes of male infertility, varicocele happens due to tortuous and dilated pampiniform plexus of veins with retrograde blood flow [1]. Varicocele is commonly identified with ultrasound imaging, presenting as multiple serpiginous anechoic lesions around the testis. Valsalva action is helpful for diagnosis, and Color Doppler can confirm the vascular condition of the lesion [2]. Rarely extratesticular varicocele coexists with intratesticular varicocele. Hereinafter we report a case of male varicocele with a history of scrotal pain, which was related to intratesticular lesions.

Case Report

A 54-year-old man was admitted to the urology department of our hospital complaining of pain in the scrotal region for about 2 months. The patient had no history of trauma, strenuous exercise and orchiopexy in the past. The blood routine and urine test were within the normal range. On physical examination, grade III varicoceles were noted on both sides, and the testes were soft as well. He was admitted to ultrasonography department for scrotal ultrasound to further assess the cause of pain. B-mode scrotal ultrasound demonstrated grossly dilated and tortuous hypoechoic veins with a width of 3 mm to 5 mm above, superior, inferior and lateral to the testes on both sides (Figure 1A). And multiple anechoic tubular lesions were spontaneously displayed in the mediastinum and subcapsular position of the two testes (Figure 1B). The vascular nature was confirmed by color Doppler. The flow was ponderous and reflux appeared on Valsalva manoeuvre for about 3 s, whether it is intratesticular or extratesticular varicocele (Figure 1C and 1D). Both testes and epididymides appeared normal in contour, size, as well as echo texture. The above features were consistent with the diagnosis of bilateral extratesticular and intratesticular varicocele.

Discussion

Varicocele occurs by reason of increased spermatic venous pressure and insufficiency of internal spermatic vein valves, and its mechanism is retrograde flow into internal spermatic vein [3]. Extratesticular varicocele is a common disease with a reported incidence up to 20% in the general male population

[4]. Most cases appeared asymptomatic, which are found by chance during physical examination, and some of them are accompanied with a history of infertility, orchitis, scrotal swelling or pain [5]. Intratesticular varicocele is an uncommon condition characterized by dilatation of the intratesticular veins in and around the mediastinum testis, which is commonly associated with extratesticular varicocele and can also occur independently [6]. The etiology may be the reduction of testicular parenchyma volume, resulting in the reduction of tightness and firmness, and then the formation of a potential lacunae to accommodate the expanded veins [7]. Intratesticular varicocele may occur in one or both testes, and the location may be subcapsular, mediastinalor or both. The varicose intratesticular veins can be tubular or elliptical. The former is mostly seen in the mediastinum of the testis, and the latter is usually located near the mediastinum of the testis [8]. Color Doppler is important to investigate the vascular nature and flow status. Pulsed Doppler could be adopted to prove the venous nature of the vessels.

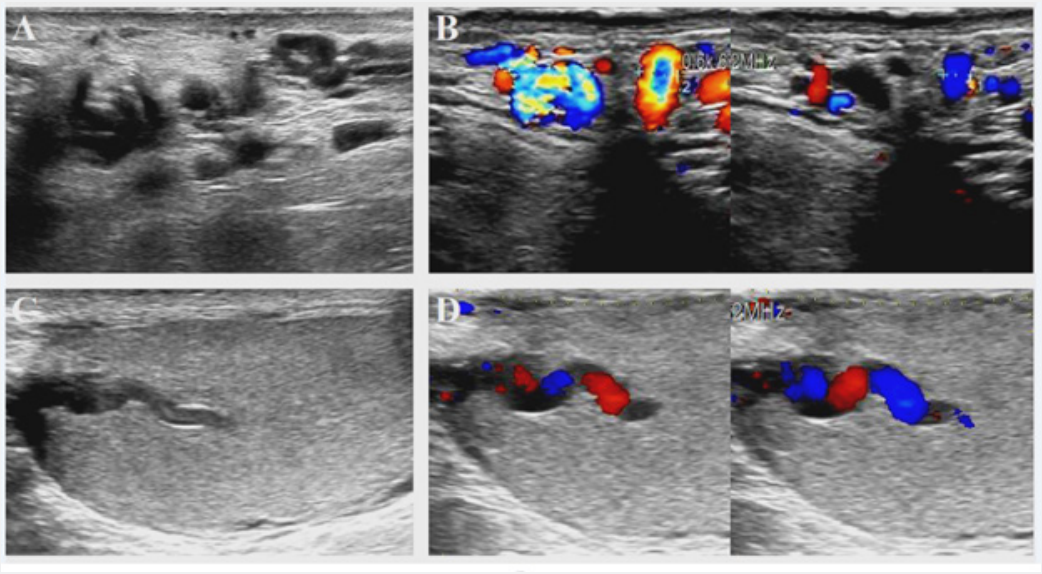

Figure 1: A. B-mode ultrasonography showed many dilated serpentine veins in the peritesticular pampiniform plexus; B. Color Doppler study detected blood flow and reflux signals at varicose veins around testes; C and D. B mode ultrasonography and color Doppler imaging displayed intratesticular varicocele at subcapsular and mediastinum.

Dynamic imaging is significant as viewing single static images may result in misdiagnosis. Valsalva maneuver is essential for the diagnosis of intratesticular varicocele. In nearly half of cases, on Color Doppler imaging flow will not appear spontaneously, and can only be detected after Valsalva maneuver [9]. In view of the blood flow characteristics of intratesticular and extratesticular varicocele are similar, it is believed that the pathogenesis of both conditions is the same. The intratesticular varicocele in our case appeared after Valsalva maneuver. The traditional treatment is surgery, that is, ligating the spermatic vein at different points along its course. Sclerotherapy and percutaneous embolisation are treatments commonly used for intratesticular varicocele, including microsurgical and laparoscopic methods, and the symptoms can completely disappear after varicocelectomy [10].

As a lesion rarely seen, intratesticular varicocele is usually consolidated with extratesticular varicocele and can occur independently. Realization of the existence of this condition is essential in the management of varicocele. Color Doppler ultrasonography is a simple and efficient diagnostic method in diagnosing this condition.

Ethics Statement

The patient provided written informed consent for treatment and for publication of this report. The study was approved by the Ethics Committee of the First Affiliated Hospital of Zhengzhou University, Zhengzhou University, Zhengzhou, Henan, China (approval number: 2021-KY-0179-002).

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Declaration of Conflicting Interest

The authors declare that there is no conflict of interest.

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