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Bilateral Intratesticular Varicocele in a Patient with a History of Bilateral Cryptorchidism

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Intratesticular varicocele (ITV) is characterized by dilatation of intratesticular veins in and around the mediastinum testis (1-7). Since it is a rare entity, its clinical implications are unknown. In this report, we describe a patient with bilateral ITV who had undergone bilateral orchiopexy in childhood. The gray scale and Doppler sonographic findings in intratesticular varicocele plus the possible contribution of cryptorchidism or orchiopexy to its development are discussed.

Case Report

A 30-year-old male was referred to the Radiology Department with infertility and Grade II left extratesticular varicocele. He had a previous history of bilateral cryptorchidism and orchiopexy at the age of 11 years, and he already had one child. A gray-scale and directional power Doppler ultrasound examination was performed with a Toshiba PowerVision 6000 by using a 11 MHz linear transducer. The patient was examined in the supine and erect positions with spontaneous breathing and the Valsalva maneuver. Gray scale ultrasonography showed a small left testis with a coarse echo-texture. The Doppler examination performed in the erect position with the Valsalva maneuver revealed bilateral intratesticular varicocele with diameters up to 4 mm in the left testis (Figure). Our criterion for the diagnosis of ITV was identification of tubular structures in and around the mediastinum testis with a diameter of 2 mm or greater, demonstrating venous flow and positive response to the Valsalva maneuver with Doppler ultrasound in all of the positions. An extratesticular

varicocele was also present on the left side. Since the patient already had one child, he refused extratesticular varicocelectomy. Follow-up spermograms and sonographic examinations were recommended.

ITV occurs in fewer than 2% of the symptomatic population in the largest series (7). Testicular pain is the most common clinical presentation (1-7). Das et al. have reported a considerable incidence (16%) of ITV in patients with infertility, with bilateral occurrence in all of them (7). The relationship of male infertility to ITV is not known. Diagnosis is made on identification of tubular structures in and around the mediastinum testis with venous flow and a positive response to the Valsalva maneuver (1-7). Its sonographic appearance is very characteristic, and further diagnostic studies are unnecessary. Initial reports have described that most of the ITV occurs on the left side and is associated with ipsilateral extratesticular varicocele (1-4). However, Das et al. reported bilateral occurrence in 39% of patients and an association with ipsilateral extratesticular varicocele was found in 44% (7). The variation in sonographic appearance may be related to the patient's position and compliance to the Valsalva maneuver during the Doppler ultrasound examination.

The remarkable feature in our case was the history of bilateral cryptorchidism and orchiopexy. O'Donnell and Dewbury have previously reported a 27-year-old patient with unilateral ITV in a testis who had undergone orchiopexy in childhood (5). The contribution of cryptorchidism or orchiopexy to the development of ITV is unclear. In an ultrastructural study with abdominal

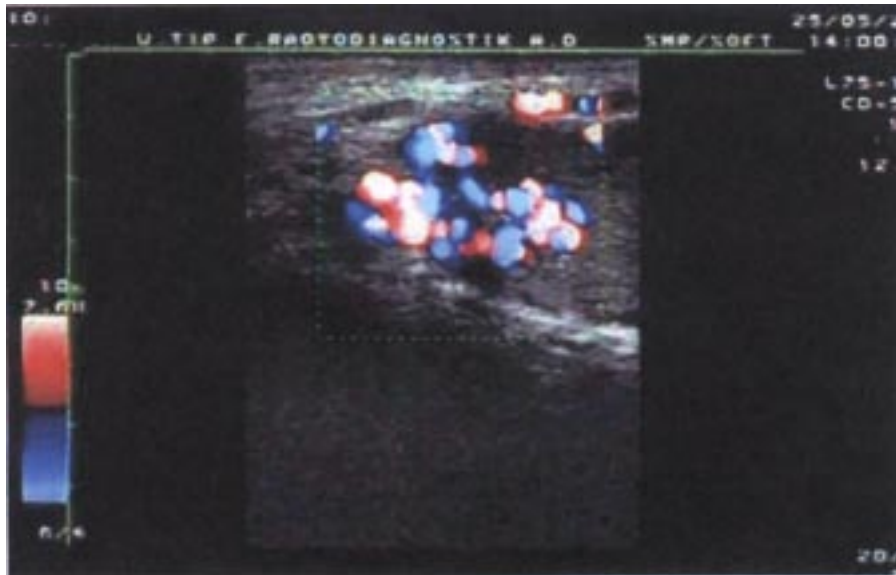


Figure. Directional power Doppler ultrasound examination of the left testis with the Valsalva maneuver in an upright position shows intratesticular veins radiating from in and around the mediastinum into the testicular parenchyme. Note the coarse echo-texture of the testis in the gray scale (m: mediastinum testis, t: testis).

cryptorchid boars, Pinart et al. have shown an increased number of blood capillaries interspersed among interstitial cells (8). Although Doppler ultrasound revealed no apparent increase in the arterialization of the testes in our case, the same etiopathogenetic mechanism leading to angiogenesis may have an additional impact on the venous morphology of cryptorchid testes.

The sonographic appearance of ITV may be mimicked by intratesticular cysts and cystic masses including epidermoid cyst, hematoma, orchitis and abscess. The main differential diagnosis is of tubular ectasia and cystic dysplasia of the rete testis, in which Doppler ultrasound helps by showing an absence of venous flow and a negative response to the Valsalva maneuver (9,10).

ITV may disappear after extratesticular varicocelectomy (7). Morvay and Nagy report a case

treated successfully by percutaneous sclerotherapy (6). However, data about treatment methods and success rates are still limited.

In conclusion, although there is very limited data in the literature, cryptorchidism and/or orchiopexy may be a contributing factor in the development of ITV. Patients with a history of cryptorchidism or orchiopexy must be carefully examined to identify the incidence of ITV.

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