TESTICULAR MICROLITHIASIS IN A 15 YEAR OLD BOY WITH HYPOGONADISM

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ABSTRACT

Testicular microlithiasis is an uncommon abnormality in which concentric laminated bodies are scattered throughout the testis within seminiferous tubules. The condition can be seen in one or two of the testes (1-22). It has been associated most commonly with cryptorchidism (1-9), infertility (5-9), and testicular neoplasms (8-15). The clinical and ultrasonographic findings of a testicular microlithiasis case with hypogonadism are described. We also review the relevant literature.

Key Words: Ultrasonography, Testicular microlithiasis, Hypogonadism

INTRODUCTION

Testicular microlithiasis (TM) is a rare abnormality with a prevalence of 05-60 % in adults and its prevalence in children is more rare (1,12). The characteristic sonographic finding in patients with TM is the presence of diffuse intratesticular nonshadowing echogenic milimetric foci (4,8,16,17). Sometimes these foci may be distributed assymetrically in two testes, and they may be accumulated at focal areas in the testis (9). While this abnormality has been generally presumed to be benign, recent reports show that there is an association between TM and primary testicular malignancy. On the other hand, in the patients with previously diagnosed TM, tumoral development has not been reported (8,12,14). In addtion to these declared conditions, TM has been reported coincidental to the trauma (8), epididymitis (8,9,21), epididymal cyst, varicocele (8,12,18), transient scrotal pain (8,9,22), hydrocele (9), and hypogonadism (18). In the present case report it is aimed to introduce a TM case with hypogonadism and we also review the relevant literature.

CASE REPORT

A 15-year-old boy was diagnosed as suffering from obesity and hypogonadism. Hypogonadism was confirmed by clinical and laboratory findings. There was no clinical evidence of chromosomal abnormality. On physical examination, he had minimal right scrotal swelling without any complaint of scrotal discomfort or tenderness. He had a right inguinal hernia repair ten years ago.

Testicular ultrasonography was performed with a linear-array 7.5 Mhz transducer. Testes were 3x2x2 cm in size and the epididymes were normal. The examination confirmed that the patient had a right hydrocele (Fig. 1) and showed innumerable nonshadowing echogenic milimetric foci scattered assymetrically throughout the testes and the lesions were accumulated at focal areas in the testes. Consequently these characteristic lesions were evaluated as TM (Figs. 1 and 2). Since the sonographic appearance of TM is specific, biopsy was not performed. The patient is being followed up in view of the reported risk of testicular malignancy.

DISCUSSION

TM is an asymptomatic nonprogressive condition (8). The pathogenesis of TM is still poorly understood. Its etiology and clinical relevance is unclear (12,18). In a study carried out on an autopsy material, it was revealed that 60 % of the seminiferous tubules contained completely calcified microliths. Similar mineralized concretions also were found in different areas of the cerebrum and cerebellum. In the same study the authors suggest the hypothesis that the mineralization process occurs according to the following stages: 1) Accumulation of cellular debris in the tubular lumen. 2) Deposition of concentric rings of glycoprotein material surrounding the central core. 3) Calcification of the glycoprotein lamellar material (1).

The presence of similar concretions in the nervous system as well as the lung in other reported cases suggests that microlithiasis could be a systemic disease (1). According to the light and electron microscopic investigations made on microliths in unilateral undescended testis, it is found that microliths originate from degenerating intratubular cells (2,11).

Sonographic findings of TM were first described by Doherty who reported a case with "innumerable tiny bright echoes diffusely and uniformly scattered throughout their substances" (4). Later reports by authors have suggested that uniform diffuse, symmetric distribution of the echogenic nonshadowing specks are characteristic of TM, and biopsy is unnecessary to establish the diagnosis of TM (6-8,12,16,17,19-21). But assymetric distribution and unilateral foci of the calcific lesions may also be seen (9). In our case we found that the typical lesions were distributed thoughout the testes assymetrically and the lesions were accumulated in focal areas in the testes (Figs. 1-2).

Although there is no evidence that it is a premalignant condition, TM has been reported more commonly with intratubular germ cell neoplasia (8-15,18). Also, Backus et al have suggested that TM cannot continue to be regarded as a benign, incidental finding, because the occurrence of primary testicular neoplasm in association with TM was 40% in their patients (9).

As a result we can say that TM associated with hypogonadism can be seen rarely. We also keep in mind that more rarely TM lesions can be assymetrically distributed in the testes and they may show local accumulation areas in the testes.

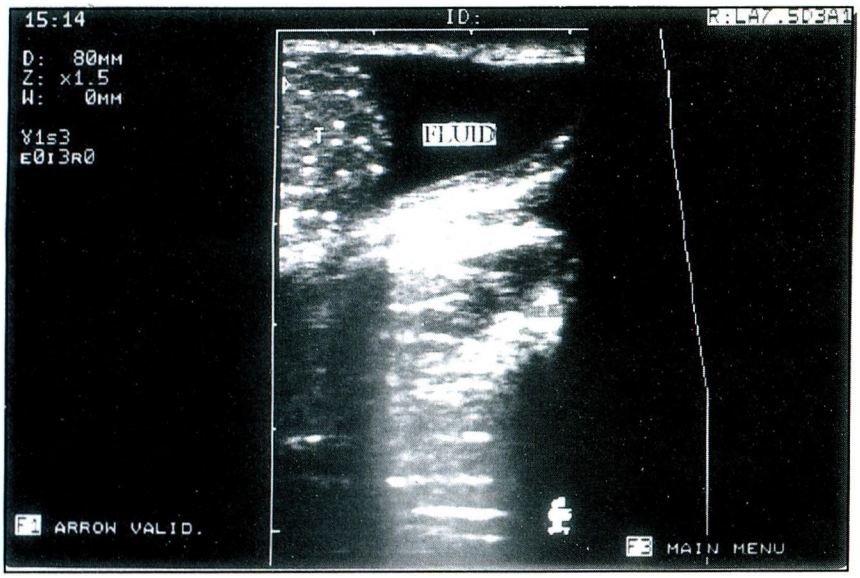

Fig. 1: Sonographic appearance of the right testis: Right hydrocele and innumerable nonshadowing echogenic foci scattered throughout the right testis.

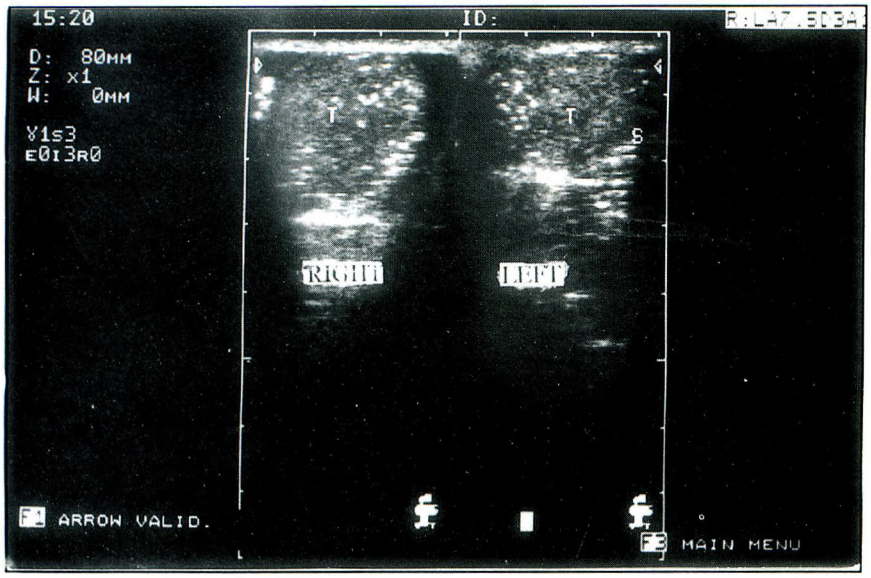

Fig. 2: Sonographic appearance of the right and left testes: Innumerable nonshadowing echogenic foci scattered assymetrically throughout the testes.

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