Doppler Findings in Testicular Microlithiasis

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ABSTRACT

Introduction: Testicular microlithiasis (TM) is a rare and asymptomatic condition, associated with various conditions and diseases. There were no specific Doppler findings found in the literature. In this case presentation we discuss the Doppler findings in TM.

Case Report: Three patients with TM were evaluated with Doppler ultrasound for specific findings.

Conclusion: There are no specific Doppler ultrasound findings in patients with TM.

Keywords: microlithiasis, testicular, Doppler, ultrasound.

CONCLUSION

Although our hypothesis was to find increased Doppler parameters due to intratesticular arterial compression, our findings suggest that there are no Doppler findings specific to testicular microlithiasis.

DISCUSSION

TM is a rare, asymptomatic disease, supposed to be associated with various benign and malignant urological pathologies, and genetic anomalies, usually found incidentally on ultrasound examination performed for other reasons. There are numerous hyperechoic, small calcifications without posterior acoustic shadowing in the testicular parenchyma. Although the incidence is usually reported to be in the range of 0.05 to 0.6% in the literature, there are some reports of 1.3% and 2% incidences, and even an incidence of 15% in infertile patients. Histologically TM consists of laminated eosinophilic calcifications, which are thought to be the result of accumulation of cellular debris and deposition of cellular debris and deposition of
glycoproteins, located in the seminiferous tubules. Although these types of calcifications are present in the majority of patients with TM, they can be seen in 4% of normal prepubertal testes and in testicular torsion, cryptoorchidism, Down syndrome, Klinefelter syndrome, male pseudohermaphroditism and germ cell tumors.

TM is reported to be associated mostly with cryptoorchidism; also, an association with infertility and intraepithelial germ cell tumors is also reported. Infertility was the most common finding in our patients and we did not encounter any testicular tumors in these patients. Although it is accepted as a benign pathology, there are no satisfactory long-term follow-up results of these patients. There are reports of TM patients gaining fertility and developing various testicular tumors. One of our cases became fertile after his accompanying varicocele problem was solved. TM has probably benign course but follow-up of the patients are needed.

On ultrasound examination, these calcifications are seen as echogenic foci, which are distributed diffusely throughout the testicular parenchyma. They can also be seen as clusters. Although unilateral involvement is reported to be rare. Two of our cases had unilateral involvement. There are no generally accepted criteria about how many echogenic foci should be present to make the diagnosis of TM but some authors classify TM as classic if there is five or more microliths in one ultrasound image and limited TM if they do not match this criterion. The ultrasonographic findings of TM are enough to make the diagnosis just by themselves. Testicular size is normal as in our cases. Usually there is no mass in the testicular parenchyma. There are numerous echogenic foci between the sizes of I and 3 mm without acoustic shadowing (if it is seen it is described as having a “Comet tail” appearance). Some authors call this appearance a “snow storm”. All of our three cases had fulfilled these ultrasonographic criteria.

To our knowledge, there are no specific reports of Doppler findings of TM in the literature. We assumed that the resistance indices and velocities would be higher in TM patients due to compression of the intratesticular arteries by those echogenic foci. However, that was not the case in our patients despite extensive involvement of the testes. All Doppler parameters and spectral examination findings were normal. Although larger patient series are needed to establish a firm statement, our results suggest that there are no Doppler findings specific to TM.

CONCLUSION

Although our hypothesis was to find increased Doppler parameters due to intratesticular arterial compression, our findings suggest that there are no Doppler findings specific to testicular microlithiasis.

REFERENCES


