

Case report:

Primary Infertility secondary to Testicular Microlithiasis.

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Abstract:

Testicular microlithiasis is an uncommon entity among adult males, resulting from tubular calcification. Reported incidence of testicular microlithiasis has been highly variable in the past decade due to increasing frequency of ultrasound examination of scrotal and testicular conditions. Testicular microlithiasis is associated with many benign and malignant conditions of testes. It is believed that in patients with Testicular microlithiasis conservative approach is warranted in absence of high risk factors, like contralateral testicular tumors, chromosomal anomalies and gonadal dysgenesis.

Key Words: Calcification; microlithiasis; testes; infertility.

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Introduction:

Testicular microlithiasis is a rare condition recognized by a sonographic pattern of multiple small foci of increased echogenicity measuring 1-3mm in diameter, randomly distributed throughout the testicular parenchyma, in which calcium deposits have been formed into the lumen of seminiferous tubules or have arisen from the tubular basement membrane components¹. Testicular microlithiasis is Grade I when 5 – 10 microliths/image are seen, Grade II when 10 – 20 microliths/image, and grade III >20 microliths are visualized on ultrasound. Testicular microlithiasis is associated with many benign conditions like varicocele, testicular torsion, epididymitis and cryptorchidism.

Testicular Germ cell tumor is the most frequent malignant condition found in testicular microlithiasis, with the increasing frequency of ultrasound examination in scrotal and testicular conditions and with advent of high frequency transducers Testicular microlithiasis is increasingly being reported.

There is no uniform protocol for the evaluation and

follow up of patients with Testicular microlithiasis. There are high risk factors like contralateral testicular malignancies, chromosomal anomalies, gonadal dysgenesis, cryptorchidism and these should be advised to have further evaluation. Testicular microlithiasis during ultrasound examination does not warrant aggressive measures and it can be followed up with self examination³.

Case Report:

A 41 years old male patient attended urology Out Patient Department with the complaints of that he has been married for last 9 years with no issues. Patient did not give any history suggestive of Diabetes Mellitus, Hypertension, or any other chronic illness. Patient gave history of good erection and ejaculation. On examination no abnormality was detected with external genitalia, penis and both testes were normal and secondary sexual characteristics well developed and routine investigations like blood sugar and kidney function tests were within normal limits. Semen analysis showed Azospermia. Patients hormonal levels testosterone, FSH, LH, Prolactin

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were within normal limits. Ultrasound scrotum showed multiple calcificated spots filling both testes and with tubular testicular microlithiasis. Patient was advised Vasography and testicular biopsy but patient was hesitant to undergo any further investigations.

Ethical approval: This case report was approved ethically before publication

Discussion:

Several questions about the pathogenesis of this condition have been answered, but however biological meaning is not well known. Several authors suggested that Testicular microlithiasis should be considered a pre-malignant condition, but since wide variation in the reported incidence of Testicular microlithiasis in men with Germ cell malignancy has been reported by different studies^{6,7}. Prognostic value of this entity as a precancerous lesion for testicular cancers remains controversial⁹. Furthermore when Testicular microlithiasis presents before development of testicular germ cell tumor and this needed to develop testicular cancer is not well known. Testicular microlithiasis is more often found in men with benign testicular conditions like cryptorchidism, testicular dysgenesis, testicular torsion and Klinefelter’s syndrome^{8,9}.

The pathogenesis of laminated microcalcification is probably due to dysgenesis of the testis, with slough of degenerated cells inside an obstructed seminiferous tubules and failure of sertoli cells to phagocytize the debris and secondarily calcification occurs. This may explain why microlithiasis is been found to accompany both germ cell tumor and non malignant condition connected to infertility.

Testicular microlithiasis is most commonly diagnosed as an incidental finding on high frequency 7.5 – 10 MHZ testicular Ultrasound. It is bilateral in distribution, although unilateral cases have been reported¹¹. Mostly presentation is asymptomatic and is often diagnosed as patient presents with some condition like infertility or testicular tumor. There have been reports of pain in Testicular microlithiasis and mechanism of pain is suggested to be distension of seminiferous tubules.

Microliths (also called calcospherites) are spherical, elongated, in shape and are eosinophilic under light and electron microscopy. Microliths are found to consist of two zones, central calcified and multi layered envelope stratified collagen fibres. It is further

covered with a fibrous capsule of spermatogenic epithelium.

Microliths usually give positive reaction for vonkesses stain indicative of calcium. Leydig cells are not typically affected by Testicular microlithiasis¹⁴, and majority of visualized seminiferous tubules often have abnormal spermatozoa or may be halted at first order spermatozoa.

Ultrasound appearance is described as Snow storm or “heaven full of stars”⁵ (Figure 1 and figure 2). Testicular microlithiasis has been divided into Classic Testicular microlithiasis with minimal 5 – 10 microliths, Grade II 10 – 20 and Grade III >20 microliths, depending on the microliths count as seen in single view.

Relationship between Testicular microlithiasis and infertility is believed to be due to obstruction of seminiferous tubules, formed by sloughing of degenerative tubular epithelium. It has been advised that if testicular malignancy is absent in the first evaluation, Testicular microlithiasis case followed up with regular self examination of testis, further testicular biopsy is indicated for high risk group. AFP and Beta HCG and lactate dehydrogenase can be used as baseline investigations for follow up.

Conflict of interest: None



Figure 1: Ultrasound of the left testicle.



Figure 2: Ultrasound of the right testicle.

References:

1. Doherty FJ, Mullins TL, Sant GR, Drinkwater MA, Ucci AA, Jr Testicular microlithiasis: A unique sonographic appearance. *J Ultrasound Med* 1987;**6**:389-92.
 2. Parra BL, Venable DD, Gonzalez E, Eastham JA. "Testicular microlithiasis as a predictor of intratubular germ cell neoplasia". *Urology* 1996;**48**:797-799. [https://doi.org/10.1016/S0090-4295\(96\)00304-4](https://doi.org/10.1016/S0090-4295(96)00304-4)
 3. Bach AM, Hann LE, Shi W, Giess CS, Yoo HH, Sheinfeld J, Thaler Ht. is there an increased incidence of contralateral testicular cancer in patients with intratesticular microlithiasis? *AJR J*
 4. Constabile RA. How worrisome is testicular microlithiasis? State of the art lecture. The AUA-2004 meeting at San Francisco.
 5. Serter S, Gumus B, Unlu M, tuncyurek O, Tarhan S, Ayyilidiz V, et al. Prevalance of testicular microlithiasis in an asymptomatic population. *Scand J urol Nephrol*. 2006;**40**:212-14. <https://doi.org/10.1080/00365590600589641>
 6. Weinberg AG, Currarino G, Stone IC, Jr Testicular microlithiasis. *Arch Pathol*. 1973;**95**:312-14.
 7. Crew FAE, Fell HB. The nature of certain ovum like bodies found in seminiferous tubules. *Quart J Micro Sci* 1992;**66**:557-79.
 8. Hobarth K, Susani M, Scabo N, Kratzik C. Incidence of testicular microlithiasis. *Uro* 1992;**40** :464-7. [https://doi.org/10.1016/0090-4295\(92\)90467-B](https://doi.org/10.1016/0090-4295(92)90467-B)
 9. Peterson AC, Bauman JM, Light DE, McMann LP, Costabile RA. The prevalence of testicular microlithiasis in an asymptomatic population of men 18 to 35 years old. *J Urol*2001;**166**:2061-4. [https://doi.org/10.1016/S0022-5347\(05\)65506-1](https://doi.org/10.1016/S0022-5347(05)65506-1)
 10. Vegni-Talluri M, Bigliardi E, Vanni MG, Tota G. testicular microliths: their origin and structure. *J Urol* 1980;**124**:105-7.
 11. Renshaw AA. Testicular calcifications: Incidence, histology and proposed pathological criteria for testicular microlithiasis. *J Urol* 1998;**160**:1625-8. [https://doi.org/10.1016/S0022-5347\(01\)62364-4](https://doi.org/10.1016/S0022-5347(01)62364-4)
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