

Bilateral testicular micro lithiasis in pediatrics secondary to testicular trauma

Abstract

Introduction: Testicular micro lithiasis is defined as the presence of five or more testicular microcalcifications in a single ultrasound image. The clinical meaning is still unknown. It has been associated with: cryptorchidism, testicular torsion, varicocele, gonadal dysgenesis or chromosomal disorders such as Klinefelter syndrome, Down syndrome, McCune-Albright syndrome and Peutz-Jeghers syndrome, which may be associated with testicular deterioration and infertility.

Clinical case: A male patient of 10 years. I present testicular trauma at the age of 5 years 2 months. With peri testicular hematoma, peri testicular and scrotal hematoma drainage was performed without incident. Its evolution was adequate and it was withdrawn at 48 hours after surgery.

Five years after the surgery, he refers to inguinoscrotal pain. Physical examination revealed: testicular atrophy and mild hydrocele. Bilateral testicular ultrasound was performed. With the following findings: testicular micro-lithiasis in the parenchyma of both testicles.

Discussion: In 2010, a meta-analysis did not report a causal link between testicular micro lithiasis and cancer in the absence of additional risk factors.

Conclusion: There is not enough evidence in the current literature to support any clinical surveillance regimen in patients with testicular micro lithiasis.

Self-examination is the most important factor in the early detection of testicular malignancy.

Keywords: testicular micro lithiasis, testicular cancer, microlithiasis

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Introduction

Testicular microlithiasis is defined as the presence of 5 or more testicular microcalcifications in a single ultrasound image.¹ It is characterized by the presence of multiple echogenic foci without a posterior acoustic shadow of 1 to 3mm in the testicular parenchyma, mostly attributable to calcifications in the seminiferous tubules.² Although it was described at the beginning of the 1960s as findings representing dysgenetic gonocytes, after the application of electron microscopy, new data on the etiology, structure, and development of intratesticular microliths have been provided, suggesting that these are located at the points of rupture in the basement membrane of the seminiferous tubules as a result of an obstruction/degeneration of said tubules.³ Testicular microlithiasis is classified as classic testicular micro-lithiasis (MTC) (more or equal to five microliths per field of vision). Testicular limited microlithiasis (less than five microliths per field).⁴ The clinical meaning is still unknown. The incidence of testicular microlithiasis is unknown, in a post-mortem study carried out in children and adults the incidence was 0.04 to 4% respectively. Two published radiological series showed an incidence of 0.6 and 0.16%.⁵ The frequency of testicular micro lithiasis in beta-thalassemia major is higher.⁶ Testicular micro lithiasis has been associated with various conditions, including cryptorchidism, testicular torsion, varicocele, gonadal dysgenesis or chromosomal disorders such as Klinefelter syndrome and Down syndrome, McCune-Albright syndrome and

Peutz-Jeghers syndrome, which may be associated with testicular deterioration and infertility.⁷⁻⁹ In addition, an association between testicular micro lithiasis and infertility has also been reported.¹⁰ The association of testicular micro lithiasis and testicular trauma has not been reported. The reason for presenting the article is to present a case of testicular trauma that evolves with the presence of bilateral testicular micro lithiasis.

Clinical case

A male patient of 10 years, with the known address in the municipality of Zaachila Oaxaca. Family hereditary history without relevant data. Non-pathological personal history. Immunization schedule complete, mild obesity nutritional status. Pathological personal history. I present testicular trauma at the age of 5 years 2 months, testicular ultrasound was performed which shows the following findings. With testicular hematoma (Figure 1), surgical exploration was performed with drainage of peri-testicular hematoma without incident. Its operative evolution was adequate and it was discharged 48 hours after surgery. At 5 years after surgery, he referred inguinal-scrotal pain, after vigorous sports activity and volume increase. Physical examination revealed: testicular atrophy and mild hydrocele. Bilateral testicular ultrasound was performed. With the following findings: testicular micro-lithiasis in the parenchyma of both testicles (Figure 2).



Figure 1 Ultrasonographic image of the left testis with testicular hematoma (white arrows)(TESTICULO IZQ), in the testicular parenchyma no testicular micro lithiasis is observed. The right testicle (TESTICULO DERECHO) also without evidence of testicular micro lithiasis.



Figure 2 Ultrasonographic image of the right testis (TESTICULO DERECHO) with testicular parenchyma micro lithiasis.

Discussion

In 2010, a meta-analysis did not report a causal link between testicular micro lithiasis and cancer in the absence of additional risk factors. However, in the presence of risk factors, testicular micro lithiasis was associated with a substantially elevated risk of testicular germ cell tumor.¹¹ Because there is a strong association between testicular microlithiasis and primary testicular neoplasia in the pediatric population.¹² Known risk factors for testicular cancer include a family history of the disease, a previously diagnosed germ cell tumor, subfertility, undescended testis, and testicular microlithiasis, characterized by intratesticular calcification.¹³ In this case, the origin of microlithiasis is directly related to testicular trauma. Which caused damage to the left testicle, (Atrophy of 40% in relation to the contralateral testicle). In addition to causing bilateral testicular micro lithiasis after testicular trauma. The effects on the structure of the testicular parenchyma can be evaluated by means of elastography (ARFI), which assesses the tissue stiffness in patients with testicular micro lithiasis increases compared to the normal population. ARFI elastography helps the early detection of microstructural changes in testicular micro lithiasis and can be used for screening and follow-up.¹⁴ In relation to possible effects on fertility, studies have been reported suggesting that testicular microlithiasis may have an influence on the results of in vitro fertilization (IVF). The degree of microlithiasis correlates inversely with the rates of fertilization and normal fertilization.¹⁵

Testicular micro lithiasis is a controversial entity, often associated with several inguino-genital pathologies, which can rarely be recovered. Testicular malignancy, although present in testicular microlithiasis, has not been definitively shown to be associated with microliths. The appropriate recommendation in these cases is to perform an annual ultrasound and self-examination recommended as a long-term follow-up measure.¹⁶ Although the cause and effect relationships in testicular microlithiasis are not clear, it has been seen in patients with

cryptorchidism, varicocele, infertility, testicular torsion, Klinefelter syndrome, alveolar pulmonary microlithiasis, neurofibromatosis, acquired immunodeficiency syndrome, intratubular germ cell neoplasia, and most importantly, primary testicular neoplasms.¹⁷ Micro lithiasis has been reported in testicular torsion but not in testicular trauma as in the present case. Testicular micro lithiasis is found more frequently in men with concomitant benign testicular conditions (cryptorchidism, testicular dysgenesis, male infertility, torsion and testicular atrophy, Klinefelter syndrome, hypogonadism, male pseudohermaphroditism, varicocele, and epididymal cysts) proposing that microcalcifications in they themselves are not malignancy.¹⁸

Conclusion

There is not enough evidence in the current literature to support any clinical surveillance regimen in patients with testicular micro lithiasis. Self-examination is the most important factor in the early detection of testicular malignancy.¹⁹

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None.

Conflicts of interest

The author declares there is no conflict of interest.

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