Testicular (gonadal stromal) fibroma: case report

Dragana Tegeltija, Aleksandra Lovrenski, Milana Panjković, Živka Eri, Ištvan Klem

SUMMARY

Testicular fibroma is a rare benign tumor of gradual growth, usually in the third and fourth decade, in the form of a hypoechogenic nodule with clear boundaries and is usually not accompanied by hormonal abnormalities. Metastases and recurrence of disease were not noted. A 40-year-old male was seen using standard H&E, and special Mallory and Gomory methods. In their case was negative for keratin, S-100 protein and factor XIIIa, and immunohistochemical study of 2 cases. Figure 3. Left: Normal testicular parenchyma. Right: Tumor parenchyma with hyalinated borders and capillaries. (Hematoxylin x 3)

DISCUSSION

Rhabdomyoma is a type of sex cord and stroma tumor. These tumors consist of 4-6% of all testicular tumors in adults males (1). Testicular fibroma has been given various names in the literature: unclassified sex cord-stromal tumor, benign gonadal stromal tumor, spindle-shaped follicular type, testicular stromal tumor, fibrous tumor, and fibrosarcoma. When it comes to setting a definite diagnosis, the application of immunohistochemical methods should be introduced into a routine diagnostic algorithm. Figure 3. Left: Normal testicular parenchyma. Right: Tumor parenchyma with hyalinated borders and capillaries. (Hematoxylin x 3)

CONCLUSION

Asymptomatic and gradual growth of the nodule in the testicle and its hypoechogenic ultrasound image suggest the diagnosis of TF. The absence of sex cord in the tumor tissue made it possible to set a diagnosis using standard staining methods, which casts the costs of performing immunohistochemical analysis and determines the testicular tumor mark, but in the cases where these elements can be histologically verified, these diagnostic methods should be introduced into a routine diagnostic algorithm.

Conflict of interest

We declare no conflicts of interest.

REFERENCES


Figure 3. Left: Normal testicular parenchyma. Right: Tumor parenchyma with hyalinated borders and capillaries. (Hematoxylin x 3)
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SUMMARY

Testicular fibroma is a rare benign tumor of gradual growth, usually in the third and fourth decade, in the form of a hypoechogenic nodule with clear boundaries and is usually not accompanied by hormonal abnormalities. Metastasis and recurrence of disease were not noted. A 40-year-old male sought medical attention due to pain in the lower back that spread to the pubic bones and the groin. During physical examination, a painless nodule with clear boundaries was palpated in the right testicle, and the ultrasonographic examination revealed hypoechogenic zone with vague boundaries of about 10 mm in diameter. Standard biochemical analyses of blood and urine tests and tumor markers (CEA, CA 125, CA 19-9, AFP and βHCG) were within the physiological limit. Histopathologic analysis set a diagnosis of testicular fibroma. The absence of sex cords in the tumor tissue made it possible to diagnose the patient using standard staining methods, but in cases where these elements can be histologically verified, immunohistochemical analysis should be introduced into a routine diagnostic algorithm.

Key words: Testicular Neoplasms; Fibroma; Diagnosis; Histological Techniques

INTRODUCTION

Testicular fibroma (TF) is a rare benign tumor which, according to the WHO, belongs to the fibroma-fibrosarcoma group. Literature records only 25 cases, occurring predominantly in the third and fourth decade of life (1). The tumor grows unilaterally, gradually, sometimes accompanied by pain (2). Tumor growth is neither accompanied by hormone disorders, nor have there been cases of metastasis or disease relapse (3).

CASE REPORT

A 40-year-old male sought medical attention due to pain in the lower back that spread to the pubic bones and the groin. During physical examination, a painless nodule with clear boundaries was palpated in the right testicle, of about 10 mm in diameter. Standard biochemical analyses of blood and urine tests and tumor markers (CEA, CA 125, CA 19-9, AFP and βHCG) were within the physiological limit. The ultrasonographic examination revealed a hypoechogenic zone with vague boundaries of about 10 mm in diameter, of unclear etiology with numerous microcalcifications that were observed in both testicles. On the sixth day after submission, under general, extradural anesthesia, the right testicle and the tunica were removed. The tumor was together with the membranes measured 40 x 25 x 20 mm, and the tunica was 80 mm in length. The capsule was smooth, greyish and shiny. At the cross section, in the central part of the testicle there was a nodule with clear boundaries measuring 14 x 10 mm. The nodule was wrinkled, hard and was prominently above the testicular albuginea. There were no signs of necrosis and hemorrhage. The tumor was of usual appearance. Microscopic examination matched the described nodule to a tumor outside the capsule with clear boundaries. The tumor parenchyma was built of beams of hyalinized bundles with rare uniform fibers and banded capillaries lined with flattened endothelial cells. Mitosis, microcysts and hemorrhage was not present. Hyalin thickness was observed with the base membrane of the surrounding compressed tubules, and the tubule was lined with Sertoli cells (Figure 1). Microcalcifications were found in the tunica and the rete testis. The absence of sex cords in the tumor tissue made it possible to set diagnosis using the standard H&E, and special Mallory and van Gieson methods of staining (Figures 2 and 3) without using immunohistochemistry. The patient was discharged and felt well for the next three months.

DISCUSSION

Rhabdomyosarcoma is a type of sex cords and stroma tumor. These tumors constitute 4%-6% of all testicular tumors in adults males (1). Testicular fibromas have been given various names in literature: unclassified sex cord-stromal tumor, benign gonadal stromal tumor, spindle-shaped fibroblast type, testicular stromal tumor with myxofibroid features, and more recently as gonadal stromal fibroma (4). The youngest patient diagnosed with TF was 2 years old (5), and the oldest was 87 (2). The average age of patients with TF is 31 (2). In our case, the patient denied any infection or trauma in the area of the testicle which is consistent with the data from Devi et al. (3). With our patient, there was no pain in the testicle, increase in tumors markers or pathological findings in the analysis of blood and urine, the same as with Pinieux et al., Reinhard et al., and Wei et al. (5, 7, 8). Only a small number of cases of TF grew rapidly and were accompanied by pain (2, 3). The tumor is most often localized in the central part of the testicular parenchyma having no contact with the tunica albuginea. Microscopically, it is composed of spindle cells arranged in a swelling or fascicular formation. These cells are separated by the fibroblastic, partly by hyalinized stroma with many capillaries. Mitoses are rare, 1 to 2 per 10 HPF (high power field), although, even 4 mitoses per 10 HPF are tolerated (2). Calcifications in this tumor are rare, but Devi et al. described a case of TF with numerous calcifications (3). Neatly testicular parenchyma may be unchanged, with hypospermatogenesis, or the tubule can be covered with swirling or fasciculus formation. These cells are separated by fibrocolagen, and the albuginea. Microscopically, it is composed of spindle cells arranged in a swelling or fascicular formation. These cells are separated by the fibroblastic, partly by hyalinized stroma with many capillaries. Mitoses are rare, 1 to 2 per 10 HPF (high power field), although, even 4 mitoses per 10 HPF are tolerated (2). Calcifications in this tumor are rare, but Devi et al. described a case of TF with numerous calcifications (3). Neatly testicular parenchyma may be unchanged, with hypospermatogenesis, or the tubule can be covered with swirling or fasciculus formation. These cells are separated by fibrocolagen, and the albuginea. Microscopically, it is composed of spindle cells arranged in a swelling or fascicular formation. These cells are separated by the fibroblastic, partly by hyalinized stroma with many capillaries. Mitoses are rare, 1 to 2 per 10 HPF (high power field), although, even 4 mitoses per 10 HPF are tolerated (2). Calcifications in this tumor are rare, but Devi et al. described a case of TF with numerous calcifications (3). Neatly testicular parenchyma may be unchanged, with hypospermatogenesis, or the tubule can be covered with swirling or fasciculus formation. These cells are separated by fibrocolagen, and the albuginea. Microscopically, it is composed of spindle cells arranged in a swelling or fascicular formation. These cells are separated by the fibroblastic, partly by hyalinized stroma with many capillaries. Mitoses are rare, 1 to 2 per 10 HPF (high power field), although, even 4 mitoses per 10 HPF are tolerated (2). Calcifications in this tumor are rare, but Devi et al. described a case of TF with numerous calcifications (3). Neatly testicular parenchyma may be unchanged, with hypospermatogenesis, or the tubule can be covered with swirling or fasciculus formation. These cells are separated by fibrocolagen, and the albuginea.

CONCLUSION

Asymptomatic and gradual growth of the nodule in the testicle and its hypoechogenic ultrasound image suggest the benignity of TF. The absence of sex cords in the tumor tissue made it possible to set a diagnosis using standard staining methods, which can be used for performing immunohistochemical analysis and determining the testicular tumor marker, but in the cases where these elements can be histologically verified, these diagnostic methods should be introduced into a routine diagnostic algorithm.

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REFERENCES


Aktin. Aiding the differential diagnosis of these two tumors is the sex cord finding and a positive reaction to MUC2 and inhibit in the TF. Neurithrombosis is positive for 5–10 protein, but negative for Aktin, desmin, MUC2 and antimyoblast. Solitary fibrous tumor is positive for C024, whereas no TF expression was detected for this antibody. Fibrosarcoma is made up of tumor cells with prominent stroma, along with numerous mitotic figures (2). Jones and Miettinen monitored TF patients for 3 and 96 months. There were no records of recurrences or metastases of the tumor in their patients (3). Given that the testis fibroma may or may not contain elements of sex cords, and bearing in mind that the testicular stromas is of the same origin as ovarian stroma, TF is a counterpart to ovarian fibroma, according to its histopathological and immunohistochemical features (2). In our patient, as well as DeVie, no elements of sex cords had been registered, thus it was possible to set the differential diagnosis via standard H&E staining method (3).