Angiofibroma of the scrotum. Differential diagnosis of hydrocele

Bolesław Kuzaka[1], Tomasz Borkowski[1], Roman Pykało[2]

[1]Department of General Oncologic and Functional Urology, Medical University of Warsaw, Poland
[2]Department of Pathology, Medical University of Warsaw, Poland

KEY WORDS

testis ◗ scrotum ◗ angiofibroma ◗ hydrocele ◗ testicular tumor

ABSTRACT

Authors present a case of an 83 year old man with angiofibroma of the scrotum treated by total excision of the tumor. The presented case was first diagnosed as a hydrocele of the testis. However, during the surgical procedure, it was recognized as the very rare condition of angiofibroma of the scrotum [1, 2]. Hydrocele of the testis is a frequently observed pathology in men. Differential diagnosis should consider scrotal hernia, tumor of the testis, and post-traumatic hematoma among others

CASE REPORT

An 83 year old patient was diagnosed by a general practitioner with a hydrocele of the right testis and was referred for surgical treatment. During admission to the surgical department, a soft mass was detected on the right side of the scrotum. During the physical examination it was observed that the soft mass was retracting into the inguinal canal, in similar fashion as an inguinal hernia. During ultrasound examination of the right scrotum (Fig. 1) the testis was found to be normal, but a separate mass, which had lipomatous consistency, was observed. Because of the uncertain final diagnosis, the decision was made to perform exploratory surgery.

Surgery was performed on February 2, 2008.

During the procedure, scrotal incision revealed a soft mass resembling a hernial sac. The right testis together with the right spermatic cord were separated from the above described mass (Fig. 2) and the inguinal canal was opened with an oblique incision (as in herniorrhaphy) to verify if the mass was not protruding from the abdominal cavity. It was discovered that the mass had its border in the area of the external inguinal ring. The entire mass was removed (Figs. 3 and 4) and the inguinal canal was reconstructed. There were no complications during the procedure and the patient was discharged home in good general condition on the third postoperative day. During the follow-up visit, no complications were noted and proper healing of the wound was observed.

Histological assessment of the excised mass revealed that it was an angiofibroma (Fig. 5).

Twelve months after the procedure the patient was in good condition. Physical and ultrasound examinations did not reveal recurrence of the angiofibroma (Fig. 6).

DISCUSSION

Angiofibroma is a benign tumor consisting of fibrous tissue with the presence of blood vessels of various sizes. Most often we can observe this type of tumor in children younger than 15 year old in which it is localized in the nasopharyngeal area (juvenile nasopharyngeal angiofibroma). This condition presents with a triad of symptoms: a nasopharyngeal mass, a blackened nasal passage, and epistaxis. It can also present with skin changes described as small, reddish-brown, smooth, shiny papules, appearing bilaterally and symmetrically over the side of the nose.

In about 85% of cases, angiofibroma is concomitant with tuberous sclerosis complex. It is rarely observed in other locations, especially in the genital area. Angiofibroma of the scrotum is very

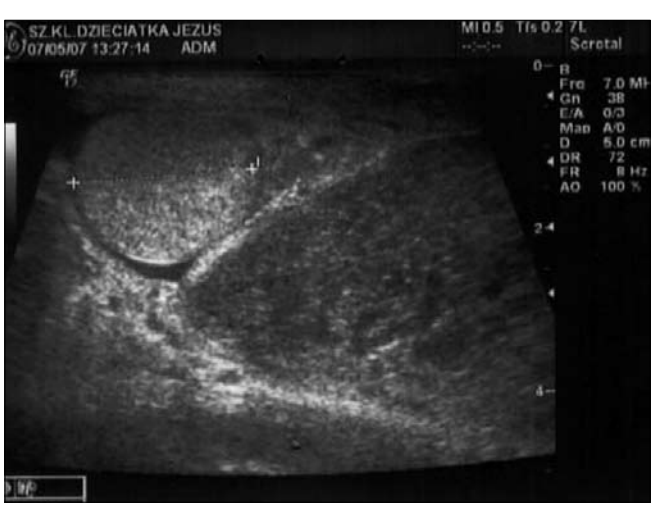

Fig. 1. Ultrasonographic view of the scrotum. Almost all of the scrotum is filled by the soft tissue; without significant flow in Doppler examination. There is no connection between this mass and the abdominal cavity.

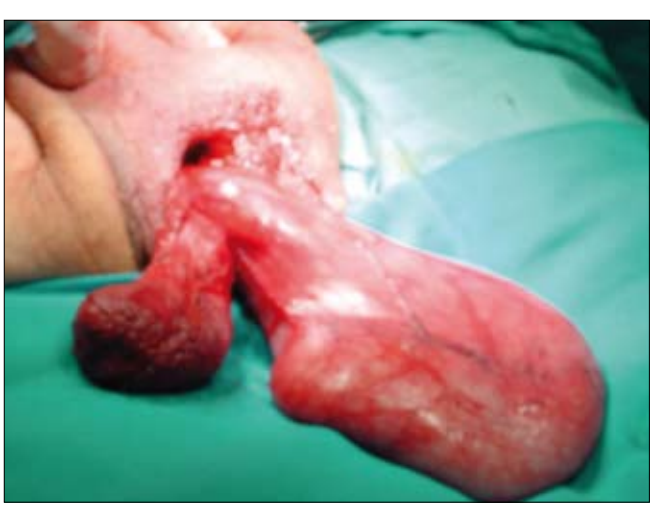

Fig. 2. Intraoperative image: testicle and spermatic cord on the right side, tumor mass on the left.

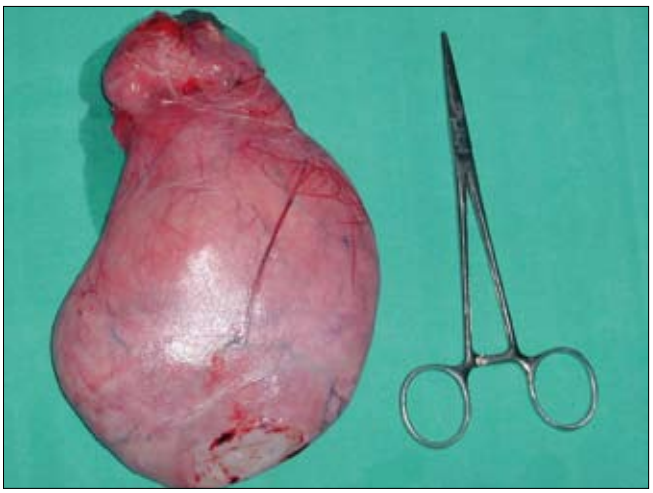

Fig. 3. Gross specimen of the tumor. A soft-pink tumor with a glossy smooth surface. The tumor was neither attached nor invading any adjacent structures; the testis was not involved.

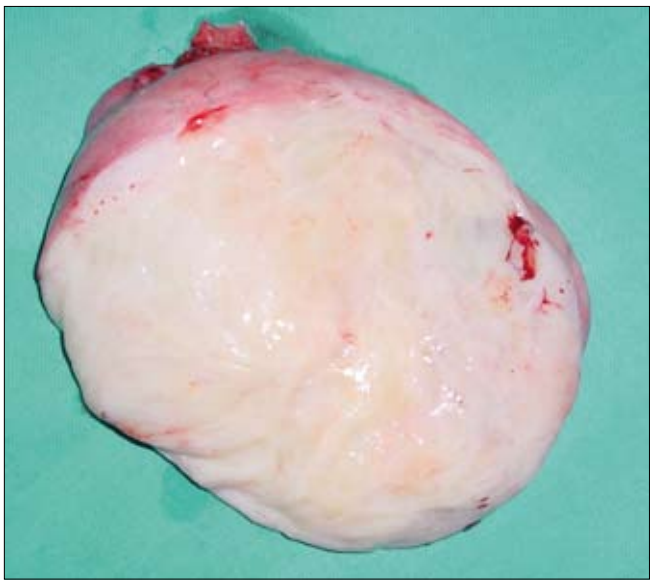

Fig. 4. Resected tumor – cross section.

rarely observed. A mass in this region may suggest hydrocele or inguinal hernia.

In Polish medical journals there are no descriptions of similar cases in the past. Japanese author Iwasa Yoko [1] has described and analyzed 51cases of this condition of which 26 were women and 25 were men. The patients' ages ranged from 22 to 78 with an average age of 53.5 and median of 52. During his study he came to the conclusion that the primary location of the majority of changes was located in subcutaneous tissues and the size of the mass was between 0.6 and 25.0 cm in diameter. Females most frequently presented with changes in the genital area (22 cases) and males in the inguinoscrotal area (19 cases). Most often the tumors were well marginated. During the microscopic observation, no atypical cells or incorrect mitosis was noticed. Immunohistochemical diagnostic procedures revealed that 29 out of 48 (60%) patients had slight expression of CD 34 (which points to vascular origin), 10 out of 48 (21%) patients had spinal muscular atrophy (which points to epithelial-glandular origin), and 4 out of 48 (8%) patients revealed desmin (muscular origin). None of the patients had an immunohistochemical reaction to protein S-100, which would suggest neural origin.

Histopathological examinations in our patient revealed that the mass is an angiofibroma, which allows us to classify this mass as a vascular fibrous tumor with some muscle fibers present.

The Iwasa [1] control group, composed of 40 out of 51 patients in whom follow-up examination was performed within 4 to 168 months, revealed that there was no recurrence or metastasis of the tumor in any case [1]. Even though this type of tumor is benign it may cause bleeding and penetrate to the surrounding structures [1], justifying surgical intervention and removal of the tumor.

It is believed that total resection of the tumor is a curative procedure. Medical literature revealed a description of a group of tumors in the genital region, named 'angiomyofibroblastoma-like tumors", which, due to their histopathological structure, could be classified as angiofibroma [5] type tumors. Laskin [4] has described a series of 11 cases treated by total tumor resection in which only one case presented recurrence or total cure of the condition was not observed.

Canales et al. [6] promote the same approach as we do, with the belief that changes like these should be surgically removed and the patient should be observed for a prolonged period of time (many years) due to the similarity of this condition to angiomyxoma, which is malignant and aggressive tumor. In medical journals, authors [6] keep in mind that the microscopic picture of individual cases is

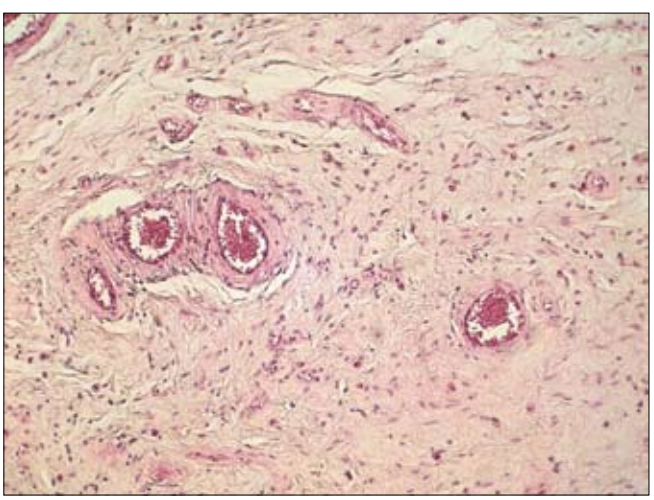

Fig. 5. The tumor consists of blood vessels with hyalinization of the wall and a collagenized fibrous stroma. No significant cytologic atypia is observed.

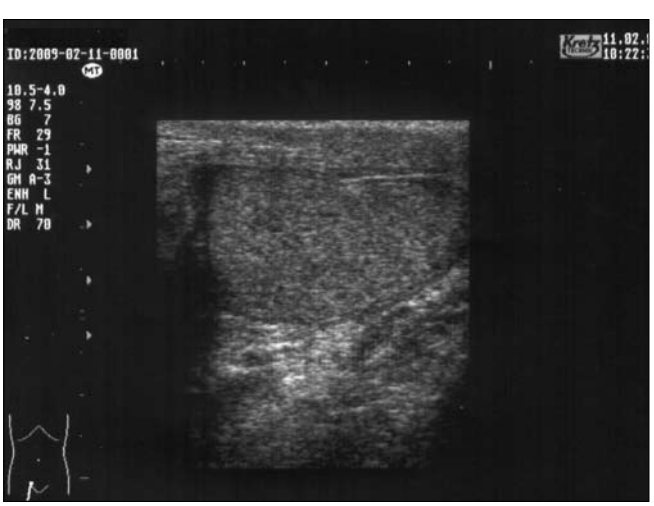

Fig. 6. US scan of the scrotum dated 11th of Feb. 2009: There aren't any signs of the scrotal tumor.

diverse and must be differentiated from the following: tumors of Schwann cells (schwannoma), spindle cell lipoma, angiomyxoma agresivum, angiomyofibroblastoma, angiomyofibroblastoma-like

tumor (also known as cellular angiofibroma), solitary fibrous tumor, spindle cell rhabdomyosarcoma, and leiomyoma

In these cases the diagnostic picture is not clear, but it is still possible to make a correct diagnosis; the diagnostic picture is not specific, however it still allows us to differentiate hydrocele of the testis from the other masses as in the case described above.

CONCLUSION

Hydrocele of the testis is generally a condition that is simple to diagnose and treat. However in some cases we must take into consideration other conditions that may present themselves in the scrotal area. In case of uncertain diagnosis and lack of conformity with noninvasive procedures to determine what kind of condition we are dealing with, we must perform exploratory surgery. We must also perform total excision of the mass due to the possibility of it being a malignant tumor of the scrotum.

Acknowledgements:

Acknowledgement to the 6th year medical student of the Medical University of Warsaw-English Division, Michał Wojdyga, for translation.

REFERENCES

1. Iwasa Y, Fletcher Ch: *Cellular Angiofibroma: Clinicopathologic and Immunohistochemical Analysis of 51 Cases*. Am J Surg Pathol 2004; 28: 1426-1435.
2. Sabah M, Mohan R, Kay E: *Para-testicular cellular angiofibroma: a rare tumor in a male transplant patient*. Virchows Archv 2006; 449: 4.
3. Samaratunga H, Fitzpatrick P: *Cellular angiofibroma of the scrotum*. Pathology 2008; 40 (3): 330-333.
4. Laskin WB, Fetsch JF, Mostofi FK: *Angiomyofibroblastoma-like tumor of the male genital tract: analysis of 11 cases with comparison to female angiomyofibroblastoma and spindle cell lipoma*. Am J Surg Pathol 1998; 22 (1): 6-16.
5. Fletcher CDM: *Angiomyofibroblastoma*, In: Fletcher CDM, Unni KK, Mertens F (eds). Pathology and Genetics. Tumors of the Soft Tissues and Bone (World Health Organization Classification of Tumors). IARC Press, Lyon, 2002, pp. 71-72.
6. Canales BK, Weiland D, Hoffman N et al: *Angiomyofibroblastoma-like tumors (cellular angiofibroma)*: Int J Urol 2006; 13 (2): 177-179.
7. Miyajima K, Hasegawa S, Oda Y et al: *Angiomyofibroblastoma-like tumor (cellular angiofibroma) in the male inguinal region*. Radiat Med 2007; 25 (4): 173-177.

Correspondence

Bolesław Kuzaka
Clinic and Department of Urology
02-005 Warsaw, Poland
4, Lindleya Street
phone: +48 22 502 17 26
bolkuz@interia.pl