Angiomyofibroblastoma of the Cervix Uteri: A Case Report

Angiomyofibroblastóm krčku maternice: kazuistika

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Summary

Backgrounds: Angiomyofibroblastoma (AMFB) is a rare histopathologic finding of the female lower genital tract. This tumor belongs to the group of mesenchymal tumors. Mesenchymal neoplasms of the modified genital skin and mucosa are uncommon. The majority of these lesions are seen in females and, collectively, they form a family of vulvovaginal soft tissue tumors. This family includes fibroepithelial stromal polyps, angiomyofibroblastoma, cellular angiofibroma, aggressive angiomyxoma, vaginocervical myofibroblastoma, vulvar leiomyomatosis, and other smooth muscle tumors. Angiomyofibroblastoma is a benign tumor, histologically very similar to pelvic aggressive angiomyxoma (AMM), a distinctive, locally infiltrative but non-metastasizing mesenchymal neoplasm with a tendency to occur in the female pelvic and perineal regions. ***Case:*** 44 years old woman with angiomyofibroblastoma of cervix uteri. ***Conclusion:*** A recognition of this entity is important to avoid misdiagnosis of other angiomyxoid neoplasms. Furthermore, unlike other, more aggressive, mesenchymal tumors of the lower genital tract, AMFB shows benign behaviour.

Key words

angiomyofibroblastoma – mesenchymal neoplasm – soft-tissue neoplasm

Súhrn

Východiska: Angiomyofibroblastóm (AMFB) je zriedkavým patologickým nálezom na ženskom genitálnom trakte. Tento nádor patrí do skupiny mezenchymálnych nádorov, ktoré tvoria skupinu nádorov z mäkkých tkanív vonkajších rodidiel a pošvy. Do tejto skupiny sú zaradené fibroepiteliálne stromálne polypy, angiomyofibroblastóm, celulárny angiomyofibróm, agresívny angiomyxóm, myofibroblastóm, vulvárna leiomyomatóza a iné tumory vychádzajúce z hladkej svaloviny. Angiomyofibroblastóm je nezhubný nádor veľmi podobný agresívnemu angiomyxómu (AMM), ktorý sa považuje za malígny mezenchymálny nádor pre jeho lokálny infiltratívny rast. Najčastejší výskyt je na vonkajšom ženskom genitáli a na perineu. Napriek jeho malígnemu rastu nemetastazuje. ***Prípad:*** 44 ročná žena s nálezom angiomyofibroblastómu krčka maternice. ***Záver:*** Rozpoznanie tohto ochorenia je dôležité, aby sme sa vyvarovali nesprávnej diagnóze iných angiomyxoidných ochorení. Je dôležité vedieť, že vykazuje benígne chovanie, na rozdiel od iných agresívnych mezenchymálnych tumorov genitálneho traktu.

Kľúčové slová

angiomyofibroblastóm – mezenchýmový tumor – tumor mäkkých tkanív

The authors declare they have no potential conflicts of interest concerning drugs, pruducts, or services used in the study.

Autoři deklarují, že v souvislosti s předmětem studie nemají žádné komerční zájmy.

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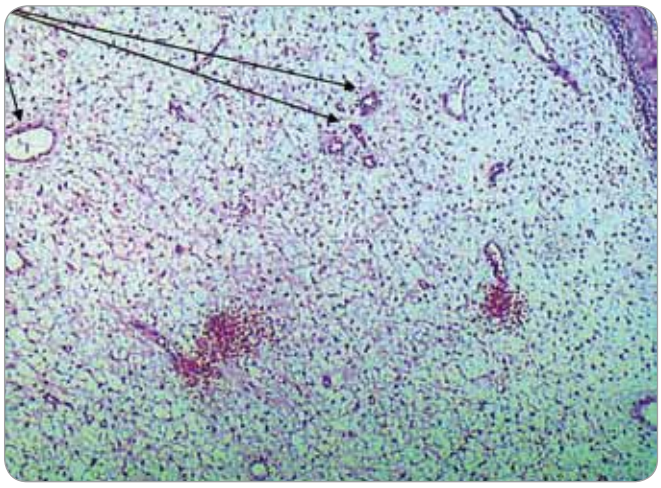

Fig. 1. Numerous thin walled capillary sized vessels. HE, 4x.

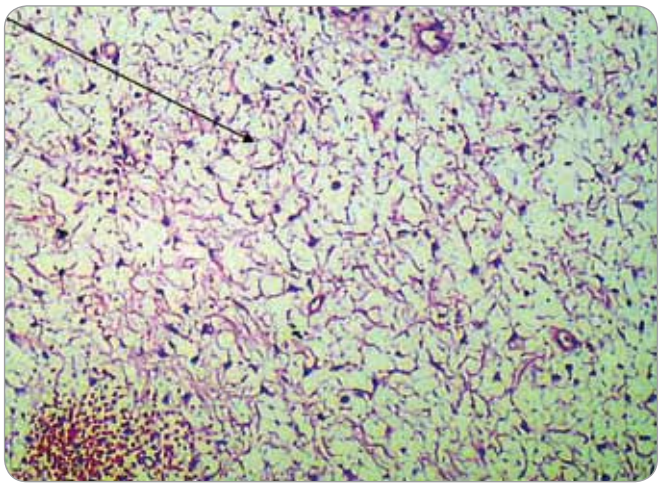

Fig. 2. Myxoid stroma. HE, 10x.

Introduction

Clinically, AMFB typically involves the vulvar soft tissue of young to middle aged females, that ranges from 25 to 54 years (mean 36.3 years) [1]. The tumor typically presents as a vulvar mass that usually has its epicenter in the labia majora. In the case of vaginal or cervical finding of AMF, we can find a tumor mass in vagina or polypoid tumor of cervix uteri. Uncommon sites of these tumors include the female urethra [2] and fallopian tube [3].

These tumors develop as slowly growing, marginated masses. Because of their preferential location on the vulva they may be confused with a Bartholin's cyst.

Pathology

The process probably aries as a neoplastic proliferation of hormonally responsive mesenchymal cells native to the unique subepithelial connective stromal layer normally found through the endocervix, vagina and vulva of adult women [4]. These tumors develop as slowly growing, marginated masses. Macroscopically, AMFBs range from 0.5 cm to 14 cm in greatest dimension with the majority of them between 2–8 cm. The lesions are well-circumscribed, round, ovoid, or lobulated masses with a soft to rubbery consistency. The cut surface varies from gray-pink to yellowish brown to tan and is of homogeneous texture with focal myxoid areas. Microscopically, the margin is well delineated and non-infiltrative. A complete or partial fibrous pseudocapsule of varying thickness may be present. Some tumors are bordered in part by mature adipose tissue or smooth muscle. The tumor is characterized by rich vascularization in a background of collagenous to edematous stroma with alternating hyper- and hypocellular regions [5,6]. The stromal background is edematous rather than myxoid. The nature of the background is supported by negative staining for Alcian blue stain. The stromal cells possess a bland, oval or elongated nuclei and either scanty, amphophilic cytoplasm with ill-defined margins or eosinophilic, tapered cytoplasm with better delineated cell borders. Intranuclear inclusions and longitudinal nuclear grooves are common in the spindle cells. Epithelioid mesenchymal cells with globoid eosinophilic cytoplasm and a single nucleus or occasional multiple, round nuclei may be present. Mitotic figures are characteristically rare

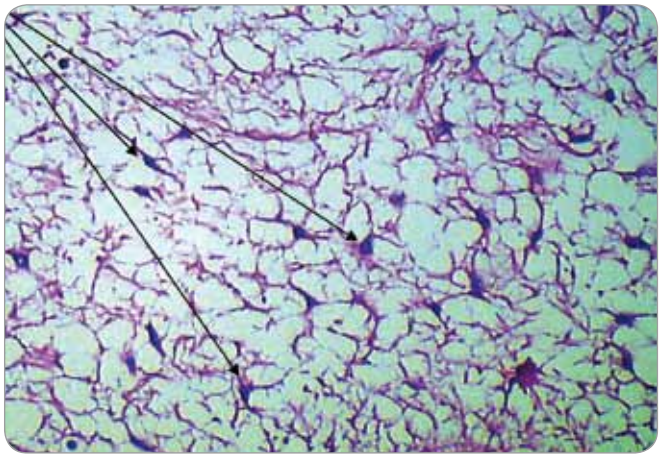

Fig. 3. Mesenchymal cells (round, oval to spindle shaped cells). HE, 20x.

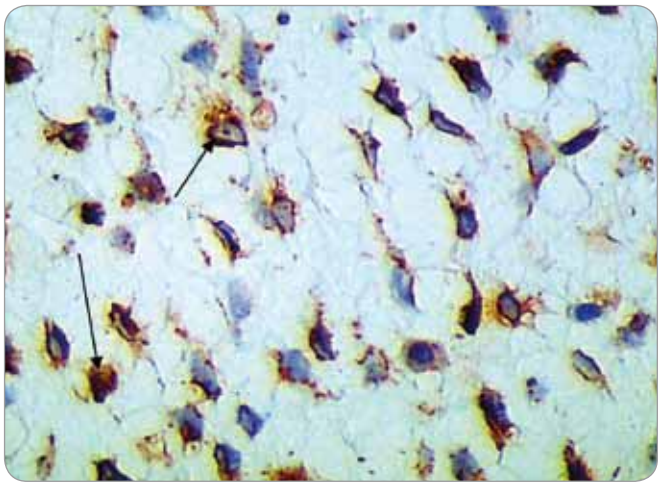

Fig. 4. Vimentin, 40x (positive reaction, arrows).

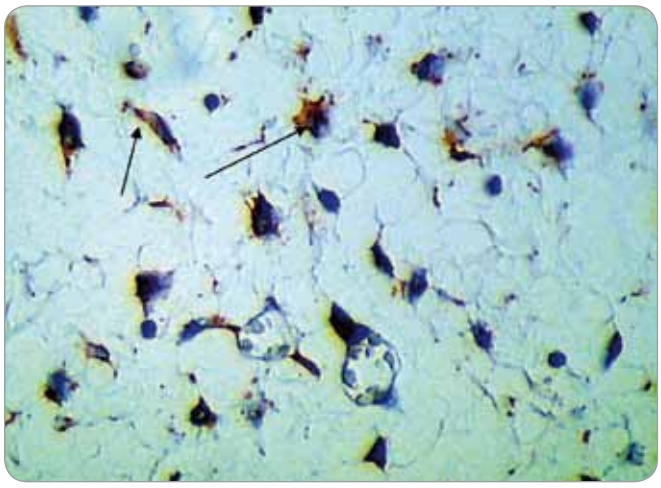

Fig. 5. Dezmin, 40x (positive reaction, arrows).

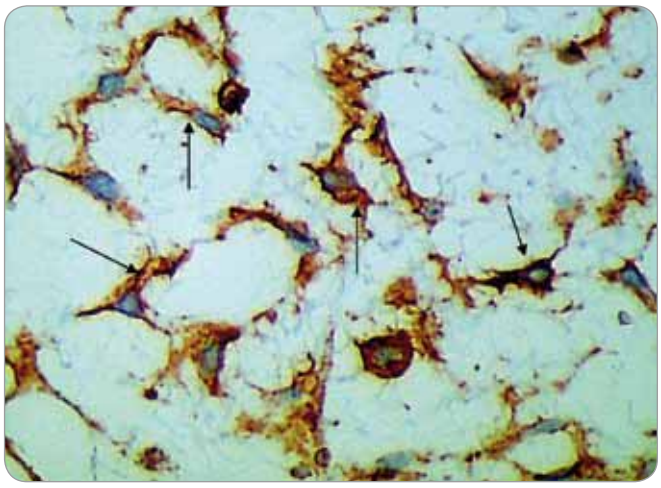

Fig. 6. CD44, 40x (positive reaction, arrows).

or absent. The cellularity is quite variable and is somewhat related to the vascularity. In most cases, the spindled and epitheloid cells proliferate in a haphazard arrangement. In the more cellular cases, spindled cells form loosely organizing fascicles. Tumor cells may aggregate or form masses around blood vessels and those that are close to blood vessels may have a myoepithelial appearance. The vascular component of the tumor consists of small to medium-sized, rounded, curvilinear, non-branching, and thin-walled vessels. Perivascular fibrosis or sclerosis is a feature detected to some degree in all cases [5]. Strong and diffuse immunoreactivity for both desmin and vimentin is demonstrated in practically all cases. Only a minority of cells in some cases show positive immunoreactivity for either smooth muscle actin or pan-muscle actin [1,6,7,8,9,10]. Tumor cells are negative for S-100 protein, cytokeratin, collagen type IV, CD 68 and myoglobin [10,11,12]. The few cases examined ultrastructurally have shown fibroblastic features in most cells, with a minority showing myofibroblastic differentiation [1,6,8].

Differential diagnosis

AMFB is a rare mesenchymal tumor arise in the superficial lamina propria of the cervix and vagina and is histologically distinguishable from mesodermal (fibroepithelial) stromal polyp, including the cellular (pseudosarcomatous) variant, superficial cervicovaginal myofibroblastoma (SCVM), aggressive angiomyxoma, and other well-recognised lesions that occur in this location [1,4,5,11]. The most important differential diagnosis is aggressive angiomyxoma, first described by Steeper and Rosai [13] in 1983. Although rare examples have been subsequently reported in males [1,7,14], the vast majority of these tumors occur in women of reproductive age. Interestingly, rare tumors with a composite morphology of both AMFB and aggressive angiomyxoma have been described [14,11]. In addition to aggressive angiomyxoma, there are a few other entities should also be distinguished from AMFB. An excellent review of the subject is available [15]. Some of the major differential diagnoses are discussed here. Cellular angiofibroma shares similarities with AMFB in terms of age, sex, and location. This lesion typically presents as

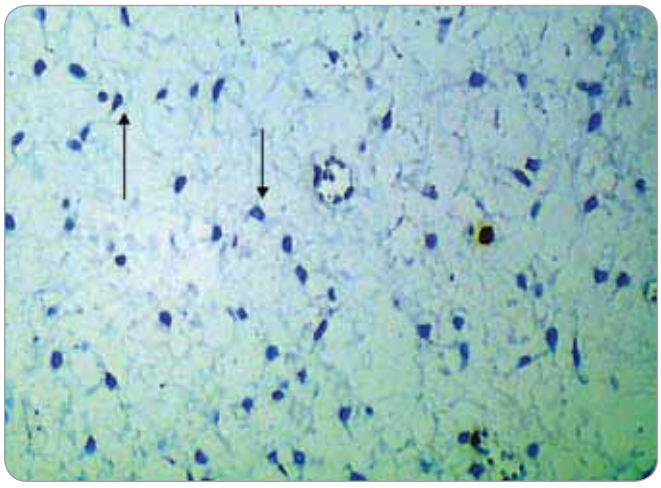

Fig. 7. Ki67, 10x (negative reaction, arrows).

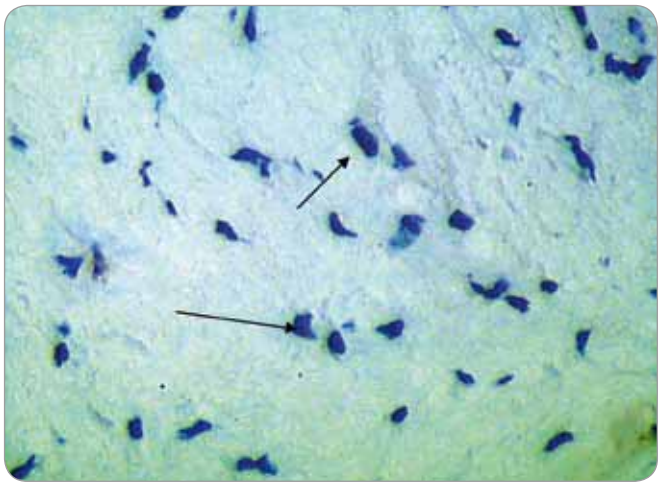

Fig. 8. Sarcomeric Actin, 10x (negative reaction, arrows).

a small, well circumscribed mass. In contrast to AMFB, focal extension into surrounding tissue can be seen. The cellular component is composed of spindle cells arranged in short intersecting fascicles that are admixed with thick walled hyalinized blood vessels and collagen bundles. Although there is brisk mitosis, pleomorphism and necrosis are absent. These tumors are reported to be benign, with no local recurrences or metastasis being described. Superficial angiomyxoma occurs most commonly in the fourth decade of life. Over half of the cases occur in the trunk and lower extremities. The rest occurs in the upper extremities, head and neck region and most of the lesions are under 5 cm [17]. In the genital region, about three quarters of the cases occur in females [18]. Grossly, superficial angiomyxoma can be polypoid. Histologically, it is a myxoid neoplasm with moderately to sparsely cellular myxoid nodules with delicate, thin walled capillary sized blood vessels. The stromal cells are spindle to stellate in shape and bland. Mitoses are uncommon. Scattered inflammatory cells, particularly neutrophils, are always present. About a third of cases may have an epithelial component such as a keratin filled cyst and epithelial strands. Although benign, about a third of the tumors may be locally destructive. There was encountered angiomyofibroblastomas with sarcomatous areas. These tumors may either resemble an angiomyofibroblastoma with „malignant features" or they may display sarcomatous areas resembling lyiomyosarcoma or undifferentiated sarcoma. None of these rare malignant tumors has metastasized [19].

Case presentation

We report a case of 44-year woman with polypoid tumor arising from the cervix uteri with histological finding of AMFB. Gynecological history of patient: menarche in age of 12 years with regular periods 28–30 days, no history of bleeding between periods. 2 spontaneous deliveries, 1 miscarriage, no history of oral contraceptives. In the age of 41 years removal of the right ovary for endometriotic cyst, without any other hormonal medication. There were no history of abnormal PAP smear. Grand mother died for diagnosis of endometrial carcinoma. Clinical finding were polypoid formation arising from the cervix with smooth surface, pink color, rubbery consistency. No other abnormal finding on genital tract.

Histopathologic finding

Polypous formation 2 cm in greatest dimension, well-circumscribed, rubbery consistency, subepithelial in location, with edematous and myxoid stroma, numerous thin- walled vessels, focal bleedings, small oval to fusiform only „stellate" cells with minimal cytoplasm, basophilic nuclei without markedly atypias, without proliferation.

Positive IHC: vimentin, desmin, CD44, negative IHC: sarkomeric actin, Ki67: under 1.0%.

Conclusion

Recognation of this entity is important to avoid misdiagnosis with other angiomyxoid neoplasms. It is important to recognize this entity as it shows benign behaviour with respect to other mesenchymal tumors of the lower genital tract, which have a more aggressive behaviour.

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