

Benign mixed tumor of the vagina

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Summary

Mixed tumor of the vagina is a rare benign tumor containing both epithelial and mesenchymal components. The authors report the case of a 35-year-old woman who presented with a painless mass that had descended from the vagina in the last six months. Physical examination showed the presence of a solitary, non-tender nodule that was 3×3×2 cm in size and seemed to originate from the posterior wall of the lower vagina. The tumor was removed and pathologically examined. The findings were indicative of a mixed tumor of the vagina, and were in agreement with previous cases. No recurrence or progression occurred during the ten-month follow-up. As this tumor shares common features with some other tumors, its differential diagnosis is very important. Moreover, due to the rarity of this disease, gynecologists and pathologists need to familiarize themselves with the features in order to avoid a misdiagnosis.

Key words: Vagina; Mixed Tumor; Spindle cell epithelioma.

Introduction

“Mixed tumor” refers to a benign lesion typically composed of two distinctive cell types: ductal epithelial cells and myoepithelial cells [1]. The tumors often occur in the salivary glands [2, 3], but they rarely occur in the breast [4], trachea [5], and vulva [6]. Mixed tumor of the vagina is very rare, and was first reported in 1953 [7]. Since then, about 50 cases have been reported. It often occurs in adult women in their fourth decade (20 to 69 years). This tumor does not present with any specific symptoms in the beginning; it is only after the mass gradually grows to a certain size that it leads to a foreign body sensation. It is often found accidentally or during routine examinations [8, 9]. It usually presents as a well-circumscribed firm mass in or above the hymen ring [10]. The tumor contains both epithelial and mesenchymal components, and because the immunohistochemical features of these components are different, the histogenesis of mixed tumor of the vagina is still controversial. The tumor is predominantly composed of spindle cells arranged in fascicles, and therefore, it could be mistaken for other tumors, such as leiomyoma of the vagina, endometrial stromal tumors, and Müllerian adenocarcinoma of the uterus; its differential diagnosis is therefore very important for timely and appropriate intervention. In this case report, the authors will elaborate on the characteristics of a vaginal mixed tumor.

Case Report

A 35-year-old woman presented with a painless mass which had descended from vagina in the last six months. There was no associated vaginal or postcoital bleeding or other complaints, except for a gradual increase in foreign body sensation due to the growing volume of the mass. No ulceration or hemorrhage was found on the surface of the mass. The mass was initially small and gradually increased in size, and it had reached about three cm when the patient consulted the present OPD. Physical examination revealed a solitary, firm, smooth gray-whitish, non-tender nodule that was 3×3×2 cm in size and was observed to originate from the posterior wall of the lower vagina and protrude towards the vaginal orifice. A provisional diagnosis of a vaginal wall tumor was made, and the tumor was removed and subjected to pathological examination. The patient is being followed up for recurrence.

Gross pathologic examination showed that the excised specimen was a solitary, sessile polyp-like gray nodule that was 2.7×1.8×1.5 cm in size. The surface was smooth, with no protrusion, ulceration or hemorrhage. A cross-section of the tumor revealed a non-encapsulated, well-demarcated, relatively transparent tumor, with most of the mass covered with vaginal mucosa. It was uniformly gray-whitish in color, with a firm and elastic texture. Histological examination showed that the lesion was well-circumscribed and overlaid by the vaginal mucosa, and predominantly consisted of dense but monotonous spindle cells, which were storiform or fascicular. The spindle cells had relatively abundant cytoplasm, were partially acidophilic, and exhibited small round to oval to spindle-shaped nuclei with indistinct nucleoli, and finely dispersed chromatin and mitoses, which were sparsely observed in stromal-like cells (Figures 1a, b). In some areas, small- to medium-sized mucinous glandular structures and small glands without mucin were noted (Figure 1c). An island of mature squamous epithelium was also observed (Figure 1d).

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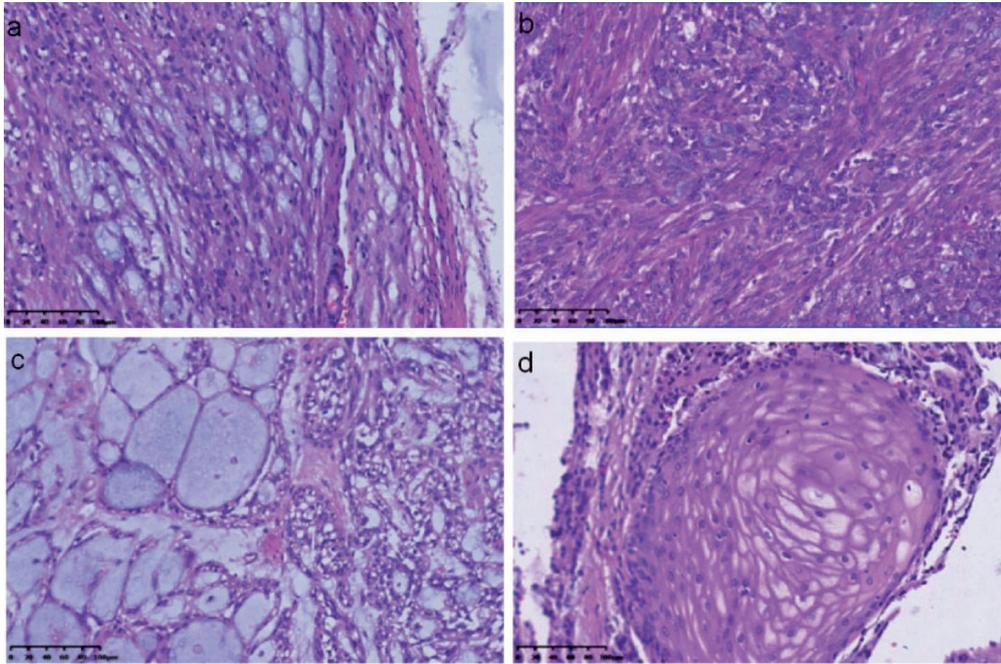


Figure 1. — Histopathological features of the vaginal mixed tumor (H&E). a, b) The lesion is well-circumscribed, and predominantly consists of dense but monotonous spindle cells, which are in the form of short fascicles. c) Small-to-medium-sized mucinous glandular structures and small glands that do not contain mucin are observed. d) An island of mature squamous epithelium are observed.

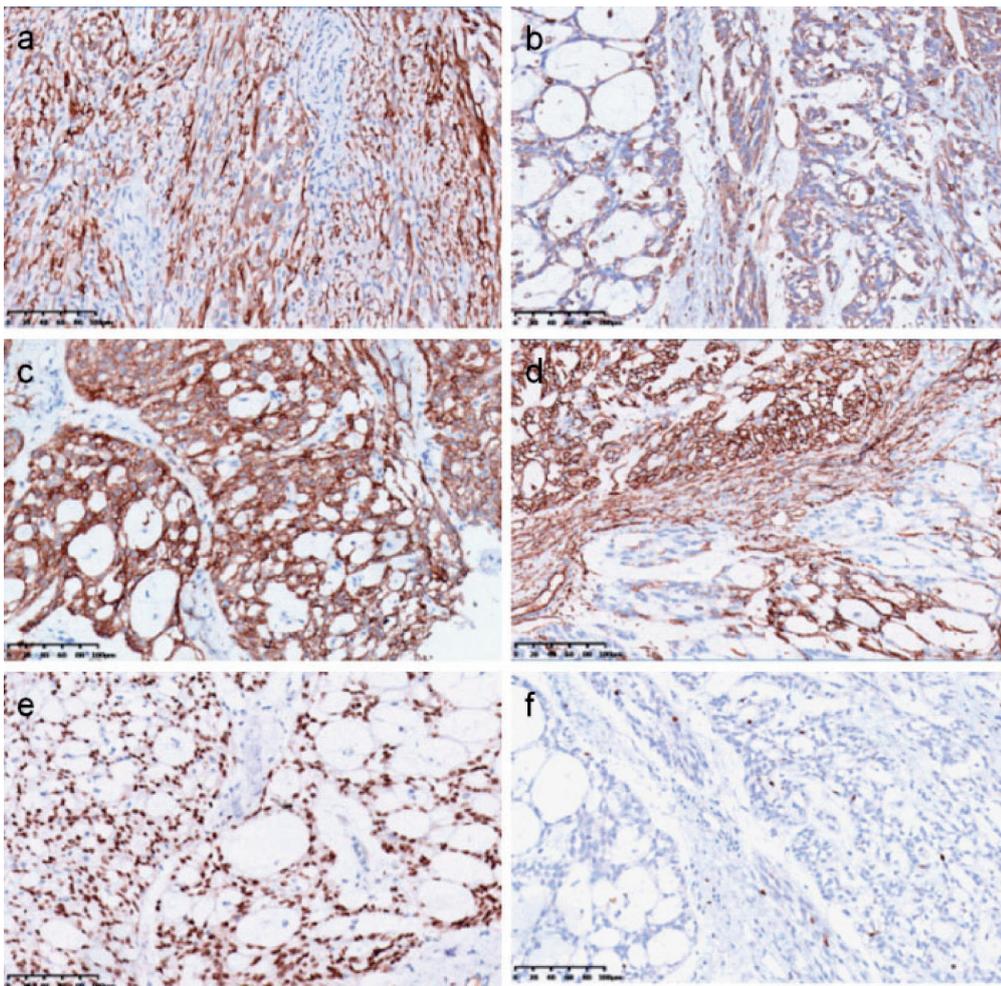


Figure 2. — Immunohistochemical staining of mixed tumor of the vagina. a) Strong expression of cytokeratin. b) Strong expression of vimentin. c) Strong expression of CD10. d) Strong expression of CD34. e) Strong expression of WT-1. f) Ki67 staining indicating a low proliferation index.

Immunohistochemical analysis using formalin-fixed paraffin-embedded sections showed that the tumor cells were strongly positive for cytokeratin, vimentin, CD10, CD34, and WT-1 (Figures 2a-e), but negative for desmin, S-100, and Ki67 (as depicted by the low proliferation index) (Figure 2f). Benign mixed tumor of the vagina (spindle cell epithelioma) was diagnosed, and a longer follow-up was proposed.

Discussion

The present patient, a 35-year-old woman, presented with a painless entity in the posterior wall of the lower vagina, which shared similar clinicopathological features with previously reported cases, and was diagnosed as a vaginal mixed tumor. In this case, the tumor was composed of predominantly of bland spindle cells with abundant cytoplasm, partial acidophilia, and small oval to spindle nuclei. The spindle cells were arranged in fascicles with variable cellularity. In some areas, mucinous glandular structures and small glands without mucin and mature squamous epithelium were noted. No necrosis was observed. The tumor cells were strongly positive for cytokeratin, vimentin, CD10, and CD34, and negative for desmin and S-100. This is in agreement with previous findings that benign mixed tumor of the vagina does not only contain both epithelial and mesenchymal components, but also co-expresses markers of both cell types [11]. In most cases, both the epithelioid and mesenchymal components are positive for cytokeratin, the mesenchymal component is positive for vimentin and CD10, and most mixed tumors are positive for CD34. On the contrary, S-100 is not detected in most cases [9]. The other staining results are variable, including staining for smooth muscle actin, desmin, and caldesmon.

Because of the variable staining results, the histogenesis of mixed tumor of the vagina is still controversial. Malik *et al.* pointed out that “spindle-cell epithelioma” of the vagina is a better term than “mixed tumor” as the myoepithelial cells are not present in the vagina or in the vaginal glandular inclusions of either Müllerian or mesonephric origin [12]. To date, several studies have shown that mixed tumor of the vagina has a Müllerian origin [9]. The present immunohistochemical analysis showed that stromal-type cells and epithelial cells co-express WT-1, which further support the notion that mixed tumor of the vagina may originate from Müllerian cells.

Mixed tumor of the vagina needs to be differentiated from other neoplasms such as leiomyoma of the vagina, endometrial stromal tumors, and Müllerian adenocarcinoma of the uterus. Vaginal leiomyoma is a benign smooth muscle tumor that has a similar microscopic cell arrangement to vaginal mixed tumors with regards to the fascicles and smooth muscle cells [13]; however, mixed tumors of the vagina usually do not have distinct cell borders, which is a distinguishing feature from vaginal leiomyomas. Moreover, with regards to immunohistochemical staining, vaginal

leiomyomas are usually negative for cytokeratin, but strongly positive for smooth muscle actin (SMA), desmin, and caldesmon. Endometrial stromal tumors are also composed of bland, oval-to-fusiform cells, similar to vaginal mixed tumors, but the pattern is different: the cells resemble proliferative-phase endometrial stromal cells and form whorls around small thin-walled arterioles [14]. The whorl structure was not observed in the present case, which may be a distinguishing feature. Moreover unlike vaginal mixed tumors, endometrial stromal cells do not stain positive for cytokeratin, an epithelial marker. Müllerian adenocarcinoma is characterized by benign or atypical glandular epithelium mixed with sarcomatous stromal components, stromal “periglandular cuff” structures, “intraglandular polypoid projections”, and occasionally heterologous elements [15]; the cell structure is bland, with no pathologic mitosis and a low proliferation index.

Because of the variable immunohistochemical findings for epithelial and mesenchymal markers, Chiang and Oliva pointed out that the final diagnosis must be based on a careful conventional microscopic evaluation of the neoplasms [16]. No metastasis of vaginal mixed tumors has been reported, except for one case in which a relapse occurred eight years after incomplete excision of the lesion [17]. In the present case, no recurrence or progression was found during the ten-month follow-up.

In conclusion, thorough resection and a detailed long clinical follow-up are essential in cases of mixed tumor of the vagina. Moreover, given its rarity, gynecologists and pathologists need to familiarize themselves with this entity in order to avoid a misdiagnosis.

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