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Case Report

# Synchronous superficial myofibroblastoma and stromal polyp of the vagina: Report of a case supporting common histogenesis of both lesions

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## ABSTRACT

Rare simultaneous occurrence of vaginal superficial cervicovaginal myofibroblastoma and vaginal stromal polyp is described. The lesions were found in a 90-year-old patient, in the anterior wall of the vagina. The diameter of the lesions was 6 cm and 2 cm, respectively. Between them, a 3 cm part of normal appearing vaginal wall was present. Both lesions showed similar myoid appearing morphology and myofibroblastic desmin+/actin-/h-caldesmon-/CD34- immunophenotype, with positivity for CD10, CD99, estrogen receptor and progesterone receptor. Larger lesion was diagnosed as benign cervicovaginal myofibroblastoma, and the smaller one had typical features of vaginal stromal polyp. This case of simultaneous occurrence of cervicovaginal myofibroblastoma and vaginal stromal polyp supports previously suggested histogenetic relationship between these lesions.

KEY WORDS: Superficial cervicovaginal myofibroblastoma, stromal polyp, vagina, histogenesis

## INTRODUCTION

Superficial cervicovaginal myofibroblastoma (SCM) is a rare lesion of the lower female genital tract, occurring in the cervix, vagina and vulva [1-8]. The tumor is benign, with very low risk of a local recurrence. Some cases are associated with hormonal therapy for breast cancer [1,2,7]. The tumor arises probably from subepithelial stroma of the lower genital tract [1]. Some authors suggest that SCM could share histogenesis with vaginal stromal (fibroepithelial) polyp [9,10]. We have observed an interesting case that supports this suggestion. Both SCM and fibroepithelial polyp [11-14], were found in the vagina, separate from each other. To the best of our knowledge, such observations are not described earlier, as no literature was available.

## CASE REPORT

A 90-year-old woman was admitted for metrorrhagia, with suspected uterine prolapse. Her medical record includes arterial hypertension, ischemic coronary disease with atrial fibrillation, and chronic renal insufficiency. On gynecologic examination, two lesions were found in the vagina. Larger polypoid lesion, measuring 6cm was found in the anterior vaginal wall, at a distance 6 cm from the urethral orifice whereas the smaller (2 cm) lesion was in the form of a vaginal condylomatoid polyp, located 3 cm from the urethral orifice. In between these lesions, vaginal wall was normal without any pathological features. The lesions were removed by surgical excision. In addition, dilatation and curettage of the endocervix and uterine cavum

were performed. The tissues were submitted for pathologic examination.

Grossly, the larger lesion was a polypoid firm nodule, resembling fibromyoma. The smaller polyp had condylomatoid surface and firm consistence. Cut surface of both lesions was pinkish-gray and fibrous-appearing, without necrosis or hemorrhages.

Histologically, the larger lesion showed typical features of SCM [1-8]. It was moderately cellular and composed of myoid appearing, spindle to stellate cells lying in a variably collagenized stroma [Figure 1a-c]. Focally, the cells created short and ill-defined fascicles; otherwise the cell arrangement was haphazard. In addition, some areas with myxoid change had a vague lace-like growth pattern [Figure 1d]. The nuclei were bland, ovoid to elongated, with inconspicuous nucleoli, and without mitoses. Very rare nuclei showed degenerative appearing pseudoatypia [Figure 1e]. The vascularization of the tumor was not prominent. It included capillary-like or somewhat larger thin-walled vessels. In a superficial part of the lesion, patchy lymphoplasmacytic infiltrate was seen. Mast cells were scattered through the whole tumor, but they were not numerous. Between the vaginal epithelium and the tumor margin, a thin Grenz zone of uninvolved stroma was apparent [Figure 1a]. This zone was in one focus destroyed by a small ulceration of the mucosa.

The smaller lesion had appearance of stromal polyp [Figure 2] [9,10], with reactive hyperplasia of the epithelium and without Grenz zone [Figure 2a]. The stroma of the polyp showed the same features as those of the larger lesion, with exception of focal increased number of vessels that were arranged perpendicularly to the surface (as often seen in polyps of various locations) [Figure 2c].

Curettage specimens contained cervical mucosa with squamous cell metaplasia and chronic lymphoplasmacytic infiltrate, and atrophic corporal endometrium with fragments of benign endometrioid polyp, respectively.

Immunohistochemistry using the streptavidin-biotin peroxidase complex method was performed on a Ventana Benchmark automatic immunostainer (Tucson, AZ, USA) with the following antibodies: Vimentin (V9, Ventana), alpha-smooth muscle actin (1A4, Dako), desmin (D33, Dako), h-caldesmon (h-CD, Dako), calponin (EP798Y, Ventana), CD10 (56C6, Novocastra), CD99 (MIC2, Neomarkers), CD34 (QBend/10, Dako), S100 protein (polyclonal, Dako), epithelial membrane antigen (E29, Dako), pancytokeratin (AE1/AE3, PCK26, Ventana), alpha-inhibin (V1, Ventana), calretinin 5A5, Novocastra), estrogen receptor (ER) (SP1, Ventana), and progesterone receptor (PR) (1E2, Ventana).

Immunohistochemically, both lesions were similar. They were positive for vimentin, desmin, CD10, CD99, ER and PR [Figures 3 and 4]. Calponin was expressed by one-fourth of the cells, and alpha-smooth muscle actin was positive in approximately 5% of the cells of the lesions. H-caldesmon, CD34, S100 protein, epithelial membrane antigen, pancytokeratin, alpha-inhibin, and calretinin were negative.

## DISCUSSION

In our case, vaginal SCM and vaginal stromal polyp occurred simultaneously and were clearly separated by non-neoplastic native tissue. According to the literature, typical cases of these lesions, differs one from another. SCM occurs mostly in peri- and postmenopausal patients whereas the stromal polyp is a lesion of younger woman [1-3,14,15]. SCM is, in contrast with the stromal polyp, a nodule with distinct margins and with subepithelial Grenz zone of native non-tumorous stroma. Stromal polyp shows usually a much greater degree of cytological variability, sometimes with mitoses and atypia. However, these differences do not apply absolutely, and an overlap between the lesions is conspicuous. The similarities between both lesions seem to be more numerous than the differences. They include myofibroblastic phenotype, which is clearly apparent at histologic, immunohistochemical and ultrastructural levels [1-8,11-15]. Both lesions are sex-steroid

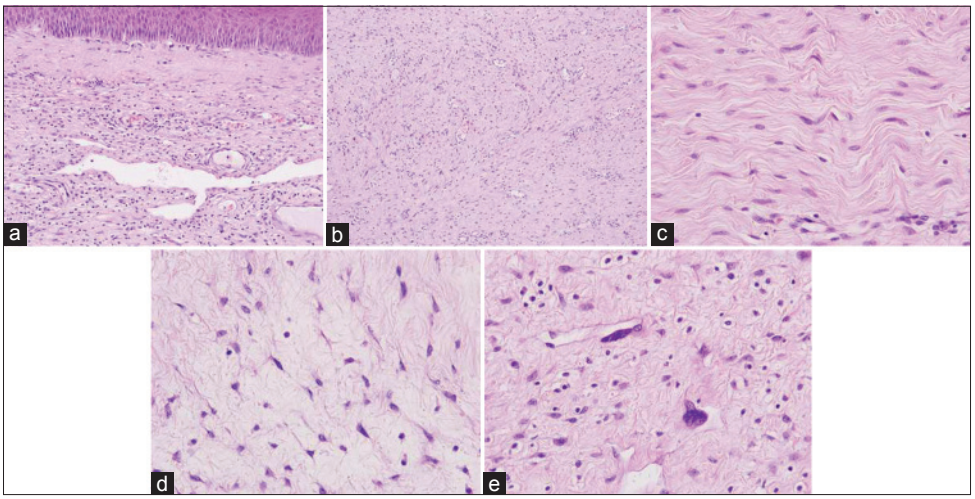


**Figure 1:** Superficial cervicovaginal myofibroblastoma, histological features. (a) Superficial part of the lesion, with a thin subepithelial Grenz zone. (b) Spindle cell proliferation with ill-defined fascicles. (c) High-power shows bland appearing cells with a wave-like arrangement. (d) Reticular arrangement of the cells in myxoid area. (e) Degenerative-appearing pseudoatypia was seen in rare foci

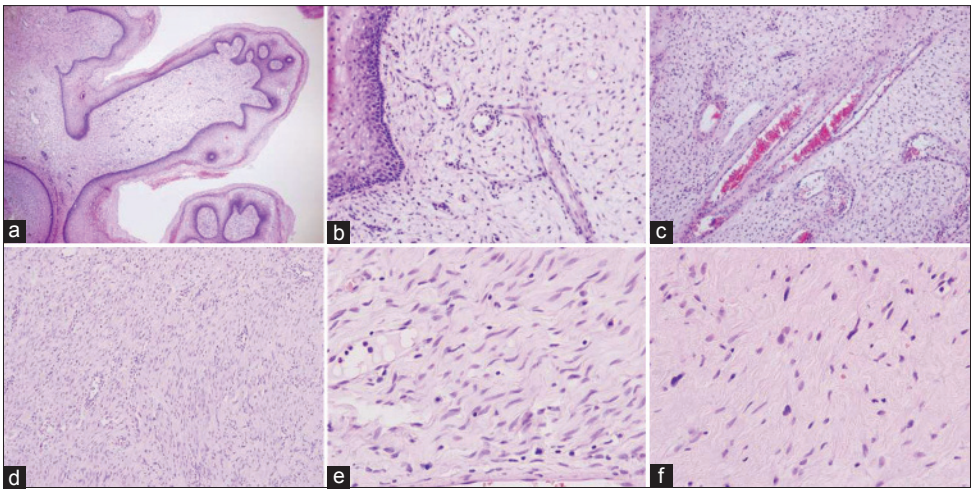


**Figure 2:** Vaginal stromal polyp, histological features. (a) Superficial part of the lesion is polypoid. (b) High-power shows reticular arrangement of the cells and lack of Grenz zone. (c) The vessels in the central part of the polyp. (d) Spindle cell proliferation similar to that of myofibroblastoma. (e) High-power shows wave bland nuclei and some mast cells. (f) Rare focus with degenerative pseudoatypia of the nuclei

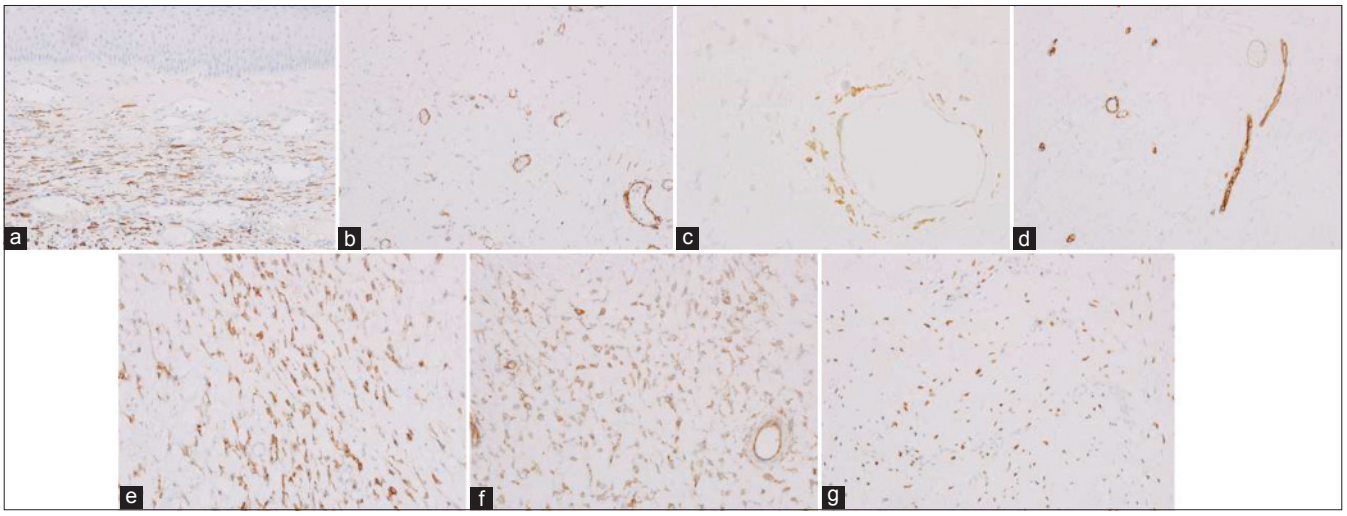


**Figure 3:** Superficial cervicovaginal myofibroblastoma, immunohistochemical findings. (a) Desmin positivity, with the lack of expression in Grenz zone. (b) Alpha-smooth actin positivity in rare tumor cells and in pericytes of the vessels. (c) H-caldesmon expression limited to the vessels. (d) CD34 expression limited to the endothelium of the vessels. (e) CD10 positivity. (f) CD99 positivity. (g) Estrogen receptor expression

hormone dependent, with an expression of ER and PR. In our case, both lesions were similar, except of superficial epithelial hyperplasia with lack of subepithelial Grenz zone in the stromal polyp. In addition, the stromal polyp contained, in contrast with SCM, in some areas numerous vessels arranged perpendicularly to the surface. Otherwise, the myoid-appearing spindle cell morphology of both lesions was so similar that, by microscopic examination of some slides and without a knowledge, which of the lesions is examined, it was impossible to decide whether the section was taken from the myofibroblastoma or from the stromal polyp.

Regarding multiple occurrences, it was described in both stromal polyp and SCM [6,13]. Such observations indicate a possible field effect in pathogenesis and development of these lesions [16,17]. Our case of synchronous SCM and stromal polyp is also explainable in this manner. We think that both lesions developed due to the influence of the same factors on a subepithelial band of sex-steroid hormone-dependent fibroblast-like cells. Additional studies are of course needed for the explanation of the histogenesis and development of both stromal polyp and SCM. Especially molecular genetic examination can determine whether stromal polyps share with SCMs any features, e.g. deletion of FOXO1, which was already found in some SCMs [8].

The differential diagnosis of the stromal polyp, besides above-mentioned SCM, includes squamous papilloma [18]. This lesion is smaller than stromal polyp (it measures usually only a few millimeters). It is composed of hyperplastic appearing, squamous cell epithelium with only thin fibrovascular core, thus lacking a predominance of the cellular stromal component typical of the stromal polyp. In case of SCM, additional differential diagnosis includes several mesenchymal lesions composed

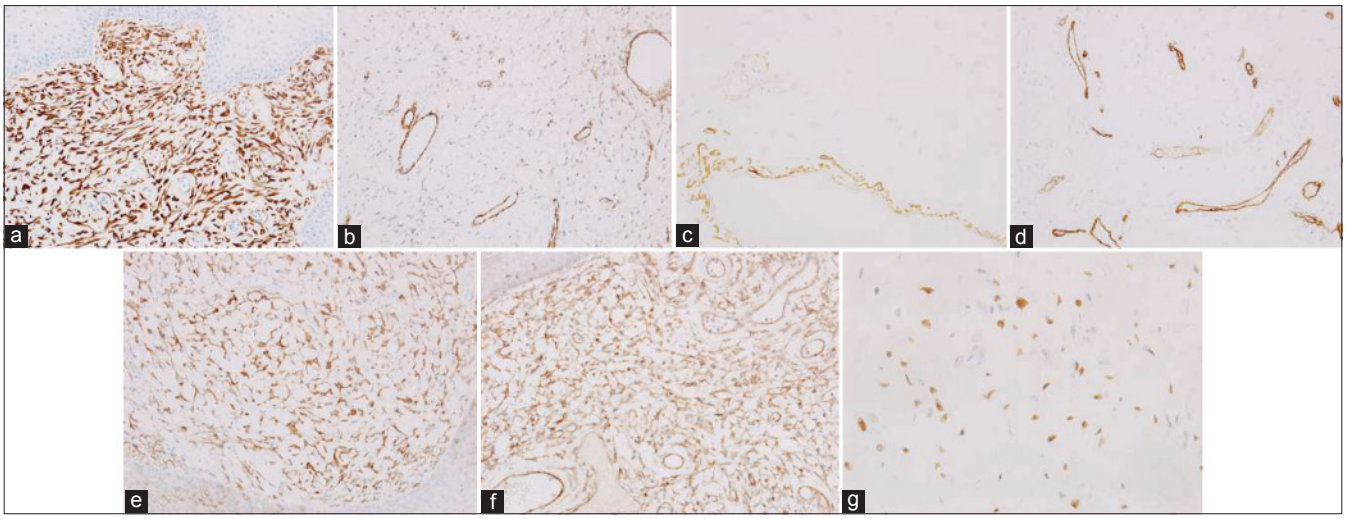


**Figure 4:** Vaginal stromal polyp, immunohistochemical findings. (a) Desmin positivity. (b) Alpha-smooth muscle expression in rare stromal cells and in pericytes. (c) H-caldesmon positivity limited to the vessels. (d) CD34 expression limited to the endothelium of the vessels. (e) CD10 positivity. (f) CD99 expression. (g) Estrogen receptor positivity

of bland appearing, spindle or stellate-shaped cells, such as angiomyofibroblastoma, cellular angiofibroma, aggressive angiomyxoma, leiomyoma and solitary fibrous tumor [18-22]. Angiomyofibroblastoma, cellular angiofibroma, and aggressive angiomyxoma feature more pronounced vasculature [19-21]. In addition, the cells of angiomyofibroblastoma are more epithelioid (plasmacytoid), and they tend to aggregate around the vessels. Cellular angiofibroma shows perivascular hyalinization and thick collagen bundles. It often express CD34, and it is usually negative for actin and desmin. Aggressive angiomyxoma has, in contrast with SCM, an infiltrative margin with entrapped regional structures. Leiomyoma contains better-defined fascicles; its fusiform cells are more eosinophilic, with cigar-shaped nuclei, and with expression of h-caldesmon [18]. Solitary fibrous tumor shows alternating cellular and collagenized areas resembling those of SCM. However, it is constantly positive for CD34 and negative for desmin [2,22].

In conclusion, there was synchronous occurrence of SCM and stromal polyp of the vagina. This case supports a suggestion that SCM and stromal polyp share histogenesis, and that they can represent different parts of the spectrum of the same myofibroblastic lesion of the lower genital tract.

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