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The histological landscape of the intrauterine polypoid masses

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Abstract

The presence of intrauterine polypoid masses is a frequently encountered gynecologic pathology, usually associated with abnormal bleeding and infertility. We investigated a series of 857 consecutive patients with polypoid uterine masses that showed great histological variability. Although most lesions are benign lesions, the incidence of neoplastic lesions that can manifest macroscopically as polypoid masses increase with age. Heterogeneity of histopathological aspects of endometrial polypoid lesions requires a thorough differential diagnosis.
Keywords: *polypoid masses, hyperplastic polyps, malignant*

Introduction

The presence of intrauterine polypoid masses is a frequently encountered gynecologic pathology, usually associated with abnormal bleeding and infertility[(1)]. These lesions are most often benign, but there are exceptions which raise the necessity of a careful examination of the histological specimen. In the present paper we present the evaluation of 857 patients preliminary diagnosed with uterine polyp.

Methods

We investigated a series of 857 consecutive patients admitted in the Obstetrics and Gynecology Clinical Hospital „Prof. Dr. Panait Sarbu" from Bucharest, Romania with a preliminary diagnosis of uterine polyp. The histological specimens were obtained by curettage or surgery before being formalin-fixed and paraffin-embedded. The 4 micron-thick serial tissue sections were routinely stained with Haematoxylin-Eosin. We investigated the histological features of all the specimens and classified the tumor proliferation according to the routine classifications in use. We also correlated the microscopically variations with the age of the patients at the time of the diagnosis.

Results

On pathology review, the 857 histological slides were separated in 15 different entities (Figure 1).

The age correlation of the identified pathologies is shown in Figure 2.

The most frequent pathology was, as expected, the endometrial polyp (516 cases), which were subtyped as follows: 236 cases with hyperplastic polyps, 210 cases with functional polyps, 42 cases with atrophic polyps and 28 cases with mixt polyps. The hyperplastic polyps were encountered in all age categories. All endometrial polyps shared similar features, like the polypoid appearance of the surface epithelium and thick-walled vessels, but the main differences between the subtypes were identified in the epithelium.

The hyperplastic polyps had an increased number of irregularly shaped glands, some cystically dilated with pseudostratified epithelium (Figure 3), while in the atrophic polyp, the glands had round shape and attenuated epithelium. Mixed polyps showed both endometrial and endocervical glandular structures and were located at the endometrial-endocervical junction.

In 2 cases, the polypoid proliferation showed disorganized hyperplastic glands layered by epithelium with focal atypia, but the stroma had myomatous features, giving an aspect of mixed epithelial and mesenchymal tumor and the diagnosis was of atypical polypoid adenomyoma (Figure 4).

In 101 cases the endometrial epithelium was hyperplastic with no atypia, but lacked the thick wall vessels and they were diagnosed with endometrial hyperplasia without atypia. In 19 cases the hyperplastic epithelium showed atypia, the number of glands was higher and their disposition showed back to back pattern and in consequence the diagnosis was atypical endometrial hyperplasia (Figure 5).

In 109 cases, although the endometrial mucosa had a polypoid aspect, we only identified foci with denser stroma as well as dilated glands with pseudostratified epithelium and these were classified as dysfunctional endometrium.

The presence of crossed fascicles of smooth muscle spindle shaped cells, covered by normal endometrial mucosa was classified as submucous leiomyoma (85 cases).

The malignant pathology encountered in intracavitary polypoid masses represented a small percent (5.51%) and all of them were identified in women over 40 years old.

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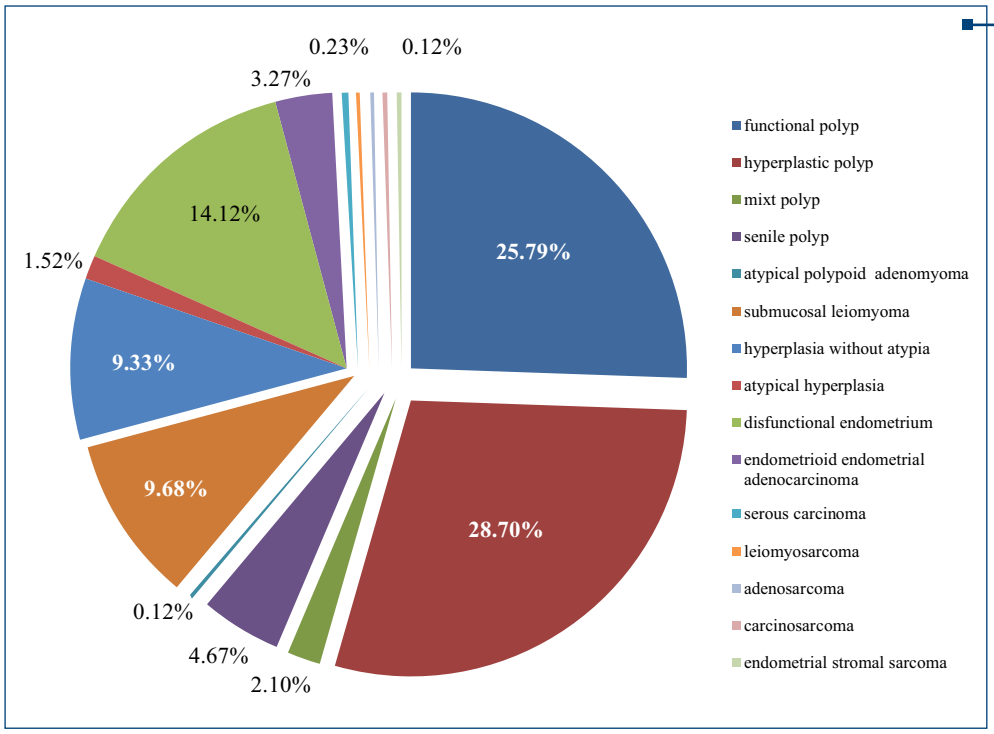

Figure 1. Graphical distribution of the 15 histological subtypes of polypoid proliferation

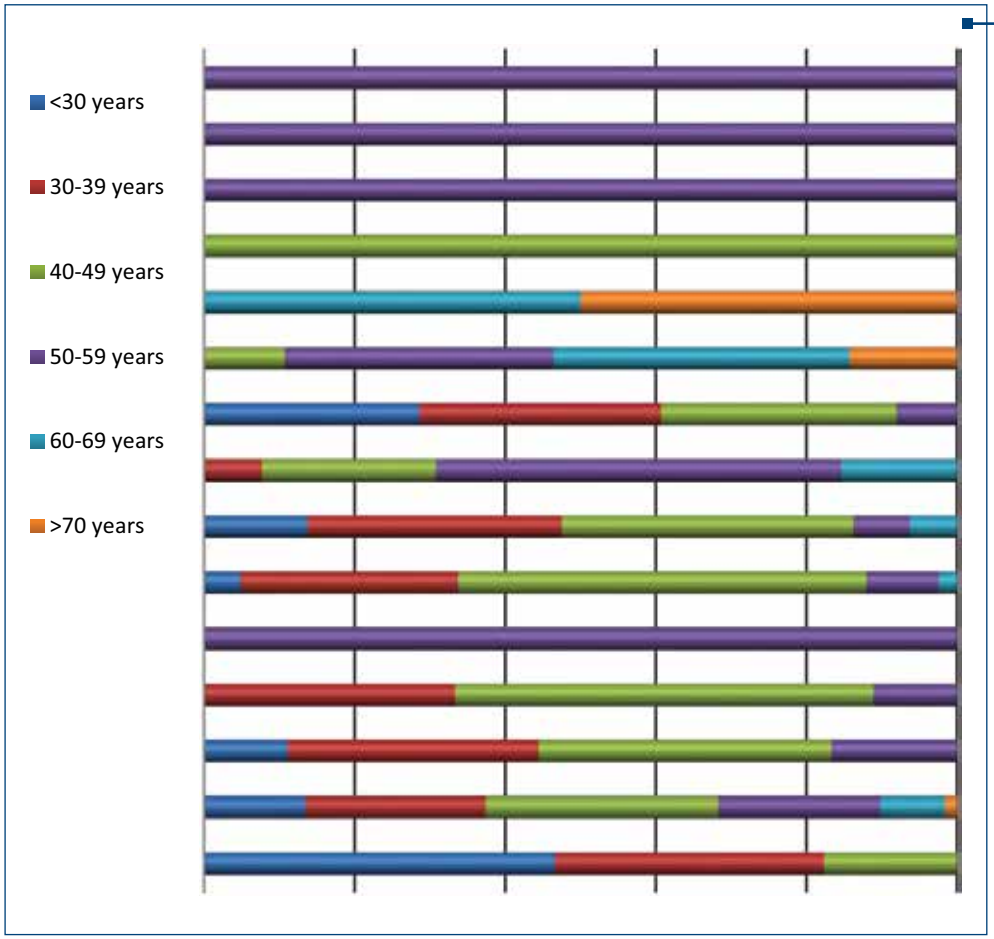

Figure 2. Distribution on age groups of the histological entities identified

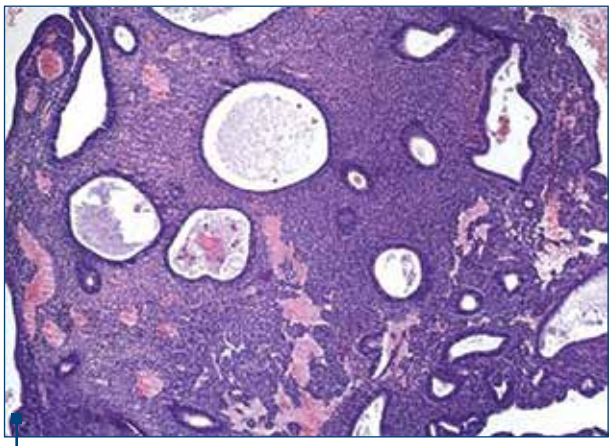

Figure 3. Hyperplastic endometrial polyp. Cystically dilated endoetrial glands in a dense stroma. HE, 100x

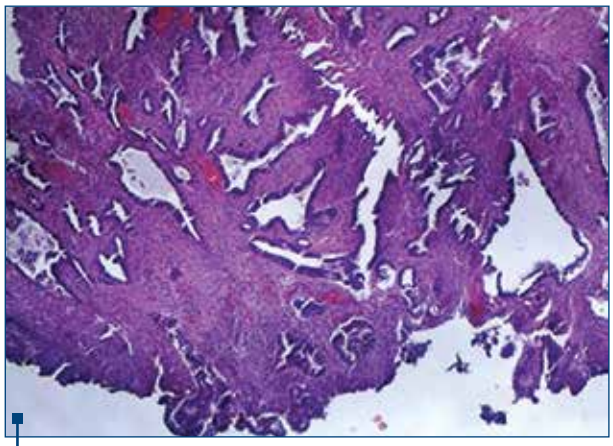

Figure 4. Atypical polypoid adenomyoma. Complex endometrial glandular structures with atypical epithelium embedded in a myomatous stroma. HE, 100x

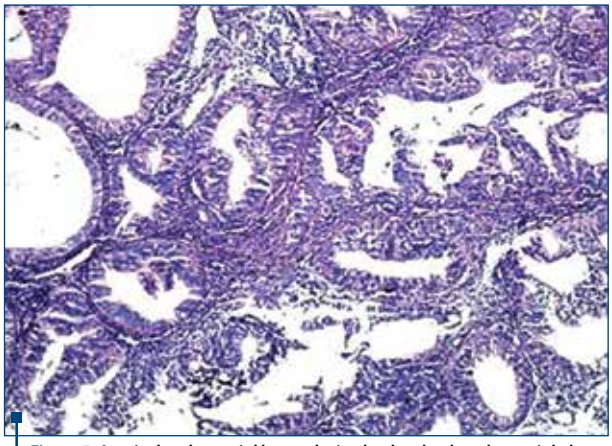

Figure 5. Atypical endometrial hyperplasia - back to back endometrial glandular structures with complex branching and atypical epithelium HE, 100x

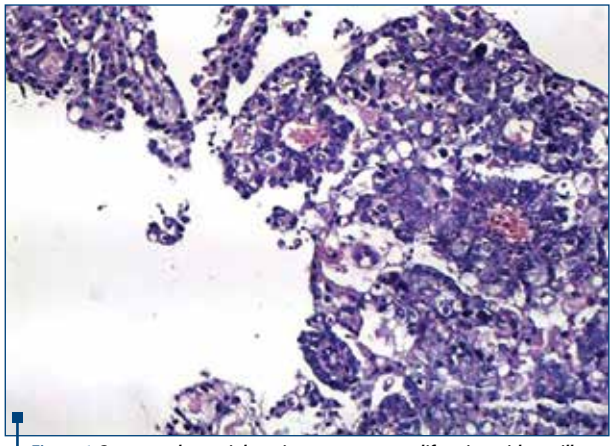

Figure 6. Serous endometrial carcinoma - tumor proliferation with papillary pattern, pleomorphic cells and hobnail features, HE, 200x

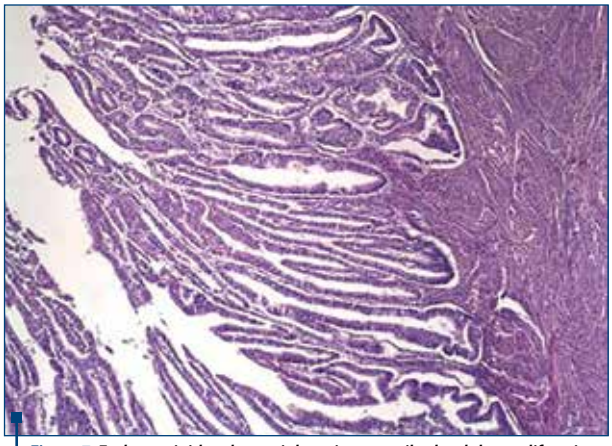

Figure 7. Endometrioid endometrial carcinoma - viloglandular proliferation of the endometrium. HE, 100x

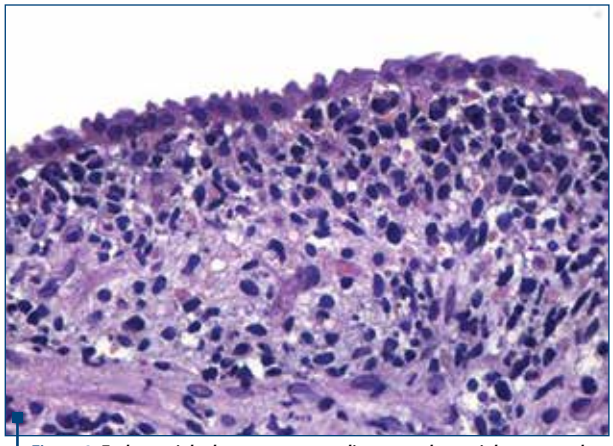

Figure 8. Endometrial adenosarcoma - malignant endometrial stromaand benign glandular epithelium on the surface, HE 200x

Forty cases were of epithelial origin, 36 cases of endometrioid carcinoma and 4 cases of serous carcinoma developed on polypoid masses. In all cases of serous carcinoma, the non-neoplastic endometrium was atrophic and the neoplastic endometrium showed marked nuclear pleomorphism, hobnail features and

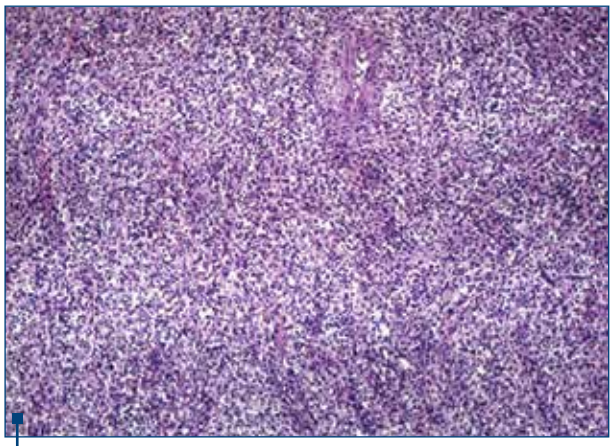

Figure 9. Low grade endometrial stromal sarcoma - malignant proliferation of the endometrial stromal cells with low mitotic activity, HE 100x

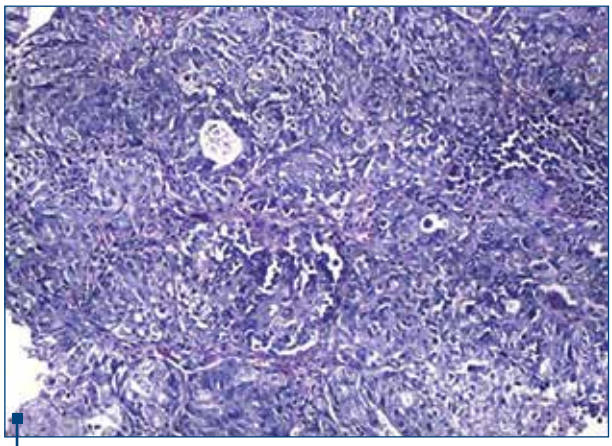

Figure 10. Uterine carcinosarcoma - malignant mixed epithelial and mesenchymal components, HE 200x

atypical mitosis (Figure 6). In 2 cases the diagnosis of serous carcinoma was established on the curettage specimen but the hysterectomy specimen showed no residual tumor.

In 4 cases of endometrioid carcinoma (Figure 7), foci of atypical hyperplasia were present as well in the nearby endometrium.

In 3 cases the malignant proliferation was of stromal origin, 1 leiomyosarcoma with microscopic hypercellular pattern, with malignant smooth muscle cells with severe nuclear atypia and brisk mitotic activity, 1 adenosarcoma with normal endometrial glandular structures embedded in a malignant stroma with periglandular cuffing (Figure 8) and 1 low grade endometrial stromal sarcoma of the endometrium with islands of atypical endometrial stromal cells with low mitotic activity (Figure 9).

In only single case we encountered a mixed malignant epithelial and mesenchymal proliferation which was diagnosed as carcinosarcoma (Figure 10).

Discussion

The polypoid endometrial lesions encompass a heterogeneous display of diagnosis from artifacts to benign and malignant lesion. A correct typing of the histological specimen is of outmost importance due to the impact on fertility, therapy associated complications and survival. The polypoid endometrial changes are most frequently associated with unopposed estrogen therapy[2].

Hyperplastic epithelium is encountered both in polyps and hyperplasia of the endometrium, this is why the differential diagnosis in these cases must be carefully evaluated. The thick walled vessels of the polyp must be differentiated from the spiraled arterioles of the endometrium. The presence of atypia must be carefully evaluated, as the risk for adenocarcinoma in this cases is higher[3].

Atypical polypoid adenomyoma, a benign tumor, can mimic endometrioid adenocarcinoma as well as other malignant tumors. An immunohistochemical panel which will highlight the smooth muscle component, together with assessing the proliferation index of tumor is of great help[4].

Submucous leiomyomas are easily identified in surgical specimens, but sometimes more difficult in the curettage specimens. The submucosal location of leiomyomashas the highest correlation with abnormal blood loss[5]. The presence of degenerative cystic and myxoid changes in submucosal leiomyomas mimics the macroscopic aspect of polyps.

Serous carcinoma of the endometrium is a high grade tumor discovered in postmenopausal women. In the curettage specimen the background is atrophic and a thorough investigation must be done as this tumor can be present in small, microscopic foci[6].

The patients with minimal invasive serous carcinoma and no remnant lesion on the hysterectomy specimen have a more favorable prognosis[7].

Tamoxifen is an estrogen derivative used in the treatment of hormone positive patients with invasive breast carcinoma which can have an agonist effect on the endometrial mucosa leading to polypoid endometrial hyperplasia with and without atypia and carcinoma[8].

In our study, 8 patients had previous long time treatment with tamoxifen and 6 were diagnosed with lesions (hyperplastic polyp in 7 cases and hyperplasia without atypia in one case) and 2 had a diagnosis of endometrioid carcinoma.

As the mixed epithelial and mesenchymal tumors of the uterus can show similar histological patterns, but different therapeutically approach and prognosis, the differential diagnosis should include careful examination of the histological specimen, correlated with the phenotypical profile[9].

The uterine sarcomas diagnosed had no preoperative suspicion of malignancy and the diagnosis was only established on the histological specimen. This is concordant with the data from the literature[10,13].

Uterine adenosarcomas are rare mixed tumors with benign epithelial glands, but malignant stromal cells with heterogeneous mitotic activity.

In cases with low mitotic count the main differential diagnosis is with the adenofibroma, the benign counterpart[11].

The histological examination should include a systematic examination of the superficial myometrial invasion as this has an impact on the surgical approach[12].

Conclusions

Endometrial polypoid lesions are a frequent gynecological pathology. Benign lesions are more common in women during fertility period and usually are the result of hormonal imbalances. The incidence of neoplastic lesions that can manifest macroscopically as polypoid masses increase with age. Heterogeneity of histopathological aspects of endometrial polypoid lesions requires a thorough differential diagnosis. ■

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