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Hysteroscopy and treatment of uterine polyps

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This article summarizes and analyzes the salient topics on the diagnosis and management of endometrial polyps, focusing on the role of the hysteroscopy. Noninvasive investigations such as transvaginal ultrasonography, with or without the use of three-dimensional ultrasonography (3D US) and contrast techniques, remain the mainstay of first-line investigation. Hysteroscopic resection represents the gold standard minimally invasive treatment for endometrial polyps. It is the most effective management and allows histologic assessment, whereas blind biopsy or curettage have low diagnostic accuracy and should not be performed.

Introduction

Endometrial polyps are benign tumors within the endometrial mucosa consisting of a stromal axis surrounded by cylindrical epithelium containing variable quantities of glands and blood vessels.

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Although they may be found as an incidental finding, endometrial polyps are often associated with clinical symptoms such as abnormal vaginal bleeding and infertility [1].

Endometrial polyps can appear as a single or multiple growths, sessile or pedunculate, and of variable dimensions and color according to the degree of vascularization. The reported prevalence of endometrial polyps widely varies and ranges from 7.8% to 34.9%, depending upon the definition of a polyp, diagnostic method used, the population studied, and it appears to increase with age [2–4].

Classification

From the histological viewpoint, the following types of endometrial polyps can be distinguished:

- **Hyperplastic polyps**. Arising from the basal endometrial layer, which is sensitive to estrogen, they are the result of the estrogen stimulation not balanced by the effect of progestin. They can be associated with diffuse endometrial hyperplasia (EH) and can have fewer localized atypical areas, particularly in postmenopausal age.
- **Atrophic polyps**. Typical of postmenopausal age, they are generally regressive alterations of functional or hyperplastic polyps.
- **Functional polyps**. They show glandular alterations similar to those of the surrounding endometrium, as they respond to the hormonal stimuli of the menstrual cycle.
- **Adenomyomatous polyps**. They are characterized by varying amounts of smooth muscle cells and fibrous tissue. The "atypical" forms are characterized by the concomitant presence of benign endometrial glands and stroma with structural atypia consisting mainly of smooth muscle, and in which the likelihood of association with endometrial cancer transformation is about 9%.
- **Pseudopolyps**. Small sessile lesions whose structure is identical to the surrounding endometrium; they are detected only in the secretory phase of the menstrual cycle, and then disappear with the menstrual flow.

Etiopathogenesis

The exact cause of polyps is unknown, probably due to many causative factors. Numerous hypotheses for the onset of endometrial polyps have been suggested and they include the following:

- *Genetic and familial hereditary factors*: clusters of anomalies in chromosomes 6 and 12 that may alter the proliferative process, resulting in endometrial overgrowth and polyp formation [5]. Indeed, familial adenomatous polyposis, diabetes, and hypertension may have a role.
- *Inflammatory factors*: women with polyps demonstrate alterations in endometrial levels of matrix metalloproteinases and cytokines compared with control subjects; these changes could produce the pathologic processes or they could be the result of the pathology development [6].
- *Endocrine factors*: main example is a condition of imbalanced hyperestrogenism (obesity, polycystic ovary syndrome, late menopause, estrogen secreting gonadal stromal tumors, and chronic liver disease) [7,8].
- *Iatrogenic factors*: as unbalanced estrogen therapy (toremifene or tamoxifen therapy for breast cancer).

Clinical appearance

Although endometrial polyps may be totally asymptomatic, frequently, they are found to be associated with one or many symptoms, as follows:

1. **Abnormal Uterine Bleeding (AUB)**: It is the most common presenting symptom for endometrial polyp both premenopausal and postmenopausal age, occurring in approximately 68% of cases [9]. However, it may present as intermenstrual spotting and/or postcoital spotting (particularly in cases of coexisting cervical polyps).
   The presence of endometrial polyps in a significant proportion of patients with AUB is because of the patient's hyperestrogenic state at the onset of symptoms, and is not itself a direct cause of these