

# ENDOMETRIAL POLYPS DIAGNOSED BY ULTRASONOGRAPHY: NARRATIVE REVIEW

RAFAELA MENDONÇA FRANHANI <sup>1</sup>, VITOR FILARDI DE TOLEDO LEME <sup>1</sup>, REJANE MARIA FERLIN <sup>1</sup>, LEONARDO DE SOUZA PIBER <sup>1</sup>, ADILSON CUNHA FERREIRA <sup>2</sup>

## ABSTRACT

**Introduction:** Endometrial polyps are solid or mixed, single or multiple formations found in the uterine cavity of women in reproductive age or postmenopausal women. Most endometrial polyps are asymptomatic, but they can be associated with abnormal uterine bleeding and infertility. Its evaluation by ultrasonography is essential, since the characteristics of the lesion can infer benignity or malignancy.

**Objective:** Review the ultrasound findings of endometrial polyps.

**Material and methods:** This is a narrative review with an emphasis on the collection of images. The databases were MEDLINE via PubMed, LILACS and Scielo via VHL (Virtual Health Library). Studies published in the last five years were included.

**Results and discussion:** Endometrial polyps appear as a hyperechoic lesion with regular contours, due to a focal mass or nonspecific thickening. Cystic glands may be visible within the polyp, and favor the diagnosis of benignity. These findings, however, are not specific for polyps, as leiomyomas (fibroids), particularly the submucosal forms, can have the same characteristics.

**Conclusion:** Endometrial polyps are solid or mixed, iso or echogenic, circumscribed nodules that may show pedicle flow on Doppler, whose main differential diagnosis is submucosal myoma. However, other diagnoses can be considered depending on the appearance of the lesion, especially with regard to contours, when malignancy is suspected.

**KEYWORDS:** ENDOMETRIAL POLYP, ENDOMETRIUM, ULTRASOUND, ULTRASOUND, DIAGNOSTIC IMAGING

## INTRODUCTION

Endometrial polyps defined as localized growths or tumors of the epithelial tissue, containing glands, stroma and blood vessels, are conditions that affect women both in the reproductive period and in menopause, predominantly between 40 and 49 years of age. Polyps may be present without causing symptoms (most) or are recognized when there is abnormal uterine bleeding (AUB), in 68% of patients, and investigation of infertility (because they affect the mechanics of fertilization and the chronic inflammation involved).<sup>1-4</sup>

The prevalence ranges from 8% to 35% and its incidence increases with age. Even though they can progress to malignancy, approximately 95% of symptomatic polyps are benign and the risk of malignancy is lower in premenopausal women.<sup>2,5,6</sup> About 82% of women who had histologically verified polyps were asymptomatic. However, endometrial polyps have been implicated in about 50% of cases of abnormal uterine bleeding and 35% of infertility.<sup>2</sup>

The incidence in primary infertility is 3.8-38.5% and 1.8-17% in secondary infertility. After polypectomy, pregnancy rates increased twice for patients using artificial insemination.<sup>4</sup>

The etiopathogenesis of the disease is still debatable. The

risk factors for this pathology are the increase in the concentration of endogenous estrogen or the application of exogenous estrogen.<sup>2,7,8</sup>

Most are located in the uterine fundus, and may vary in size from about 5 mm to fill the entire uterine cavity. If an endometrial polyp is attached to the uterine surface by a narrow, elongated pedicle, then it is known as a pedicle; however, if it has a large and flat base, absence of a pedicle, it is known as sessile. Histologically, they range from normal endometrial tissue to simple or complex hyperplasia, but are rarely malignant.<sup>2</sup>

Transvaginal ultrasound (TVUS) is the main test used in the diagnosis of endometrial polyps, although hysteroscopy visualization is determined to be the gold standard for diagnosis.<sup>9,10</sup> TVUS has a reported sensitivity of 19% to 96%, specificity of 53% to 100%, positive predictive value (PPV) of 75% to 100%, and negative predictive value (NPV) of 87% to 97% for diagnosing endometrial polyps. By including color Doppler, sensitivity increases to 97% and specificity to 95%.<sup>11</sup>

Management of endometrial polyps depends on symptoms, risk of malignancy, and fertility problems. It can be grouped into conservative surgery, radical surgery and

1. Departamento de Imaginologia, Universidade Santo Amaro, São Paulo  
2. Núcleo de Ensino em Radiologia e Diagnóstico por Imagem (NERDI) e Instituto de Diagnóstico por Imagem de Ribeirão Preto (IDI). São Paulo, Brasil.



MAILING ADDRESS  
LEONARDO DE SOUZA PIBER  
Rua Marechal Deodoro, 135 apartamento 62B  
Bairro Granja Julieta - São Paulo, SP - CEP 04738-000  
E-mail: prof.leonardopiber@gmail.com

non-surgical conservative surgery. Small asymptomatic polyps may resolve spontaneously, in these cases watchful waiting may be the treatment of choice; when smaller than 10 mm in asymptomatic women may undergo spontaneous regression in up to 27% of cases. However, in women suffering from infertility, most do not appear to spontaneously regress and surgical intervention is usually required.<sup>2,10</sup>

**OBJECTIVE**

Review the ultrasound findings of endometrial polyps.

**MATERIAL AND METHODS**

This is a narrative review with an emphasis on the collection of images. The databases were MEDLINE via PubMed, LILACS and Scielo via VHL (Virtual Health Library). The health descriptors (MeSH terms) used were endometrial polyps, ultrasonography, ultrasound, diagnostic imaging, in the following search strategy: (endometrial polyps) AND (ultrasonography OR ultrasound OR diagnostic imaging).

Studies (clinical trials, pictorial essays, literature reviews, case reports, among others) in English, Spanish and Portuguese which had images of diagnostic methods, which were in accordance with the research objective and available online in full text, published in the last five years were included.

**RESULTS AND DISCUSSION**

Endometrial polyps appear as a hyperechoic lesion with regular contours, due to a focal mass or nonspecific thickening. Cystic glands may be visible inside the polyp. These findings, however, are not specific for polyps, as leiomyomas (fibroids), particularly the submucosal forms, can have the same characteristics. Imaging is best on day 10 of the menstrual cycle, when the endometrium is thinnest, to minimize positive phalluses and false negative results.<sup>2</sup>

Sonographic images 1-12 exhibit the features found in endometrial polyps.

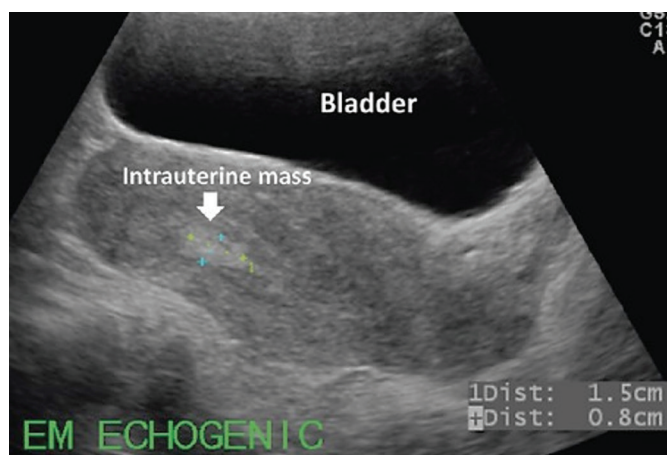


Figure 1 – Transabdominal ultrasound showing a hyperechoic endometrial polyp, measuring 1.5 x 0.8 cm.<sup>13</sup>

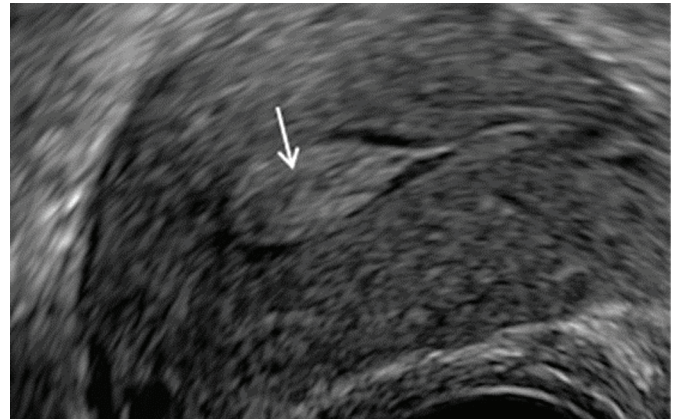


Figure 2 – Transvaginal ultrasound: isoechogenic polyp filling the uterine cavity.<sup>4</sup>

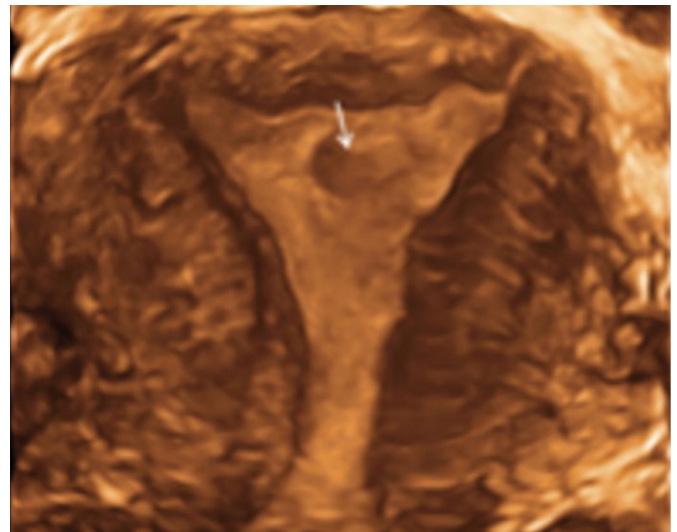


Figure 3 – Three-dimensional ultrasound: finding of endometrial polyp.<sup>4</sup>

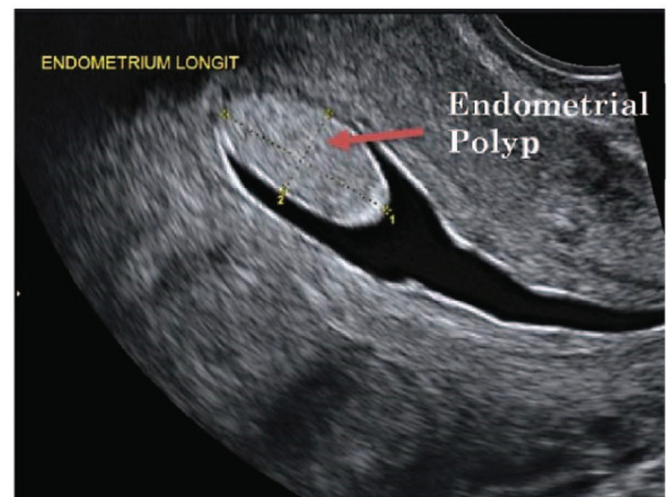


Figure 4 – Transvaginal ultrasound: isoechogenic endometrial polyp. Distention of the uterine cavity produced after saline infusion.<sup>1</sup>



Figure 5 - Image showing distention of the uterine cavity produced after infusion of saline solution, which allows better visualization of the pathologies. An endometrial polyp measuring 5.8mm can be seen on the posterior wall.<sup>11</sup>



Figure 8 - Doppler ultrasound: solid, isoechogenic, homogeneous endometrial polyp with vascular pedicle. Favorable aspect for benignity. Distention of the uterine cavity produced after saline infusion.<sup>15</sup>

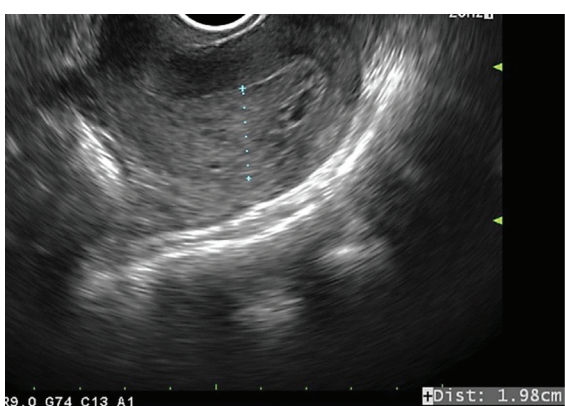


Figure 6 - Transvaginal ultrasound showing a complex heterogeneous tumor in the endometrial cavity. The largest tumor thickness was 1.98 cm. A 66-year-old patient had undergone hormone replacement therapy three years before experiencing postmenopausal vaginal bleeding. Histology: adenomyoma.<sup>13</sup>

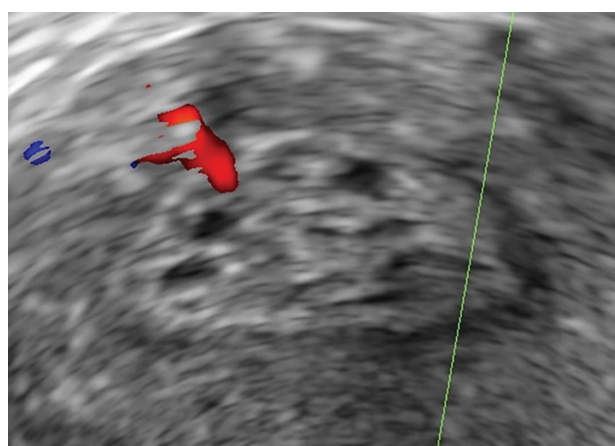


Figure 9 - Doppler ultrasound: solid, isoechogenic, homogeneous endometrial polyp, with vascular pedicle and intermingled cystic areas. Favorable aspect for benignity.<sup>14</sup>

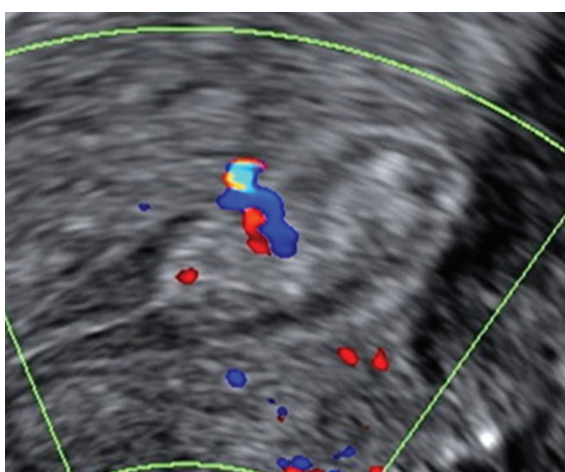


Figure 7 - Doppler ultrasound: solid, isoechogenic, homogeneous endometrial polyp with vascular pedicle. Favorable aspect for benignity.<sup>14</sup>

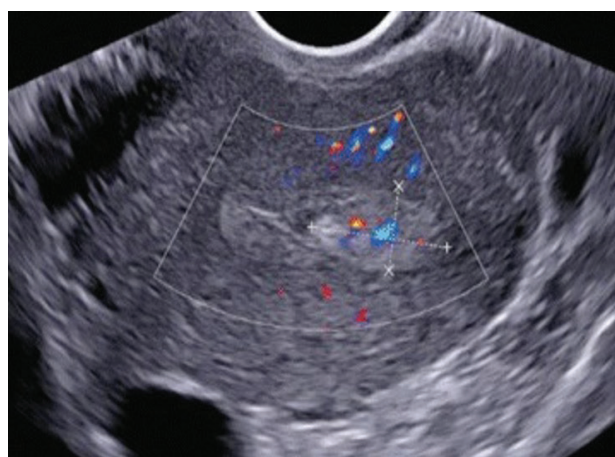


Figure 10 - Doppler ultrasound: solid, hyperechogenic, homogeneous endometrial polyp with vascular pedicle.<sup>16</sup>

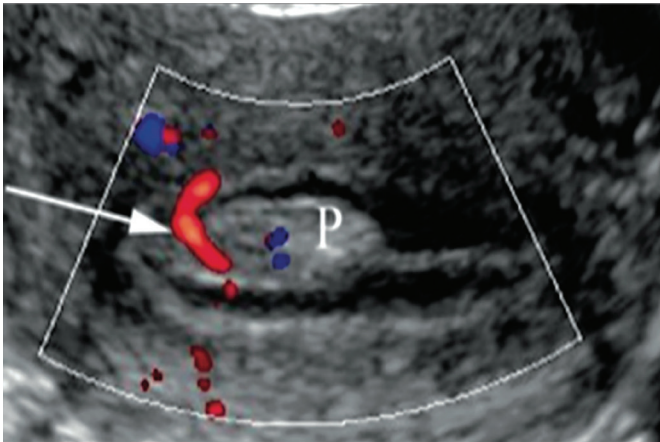


Figure 11 – Doppler ultrasound: solitary, smooth, well-defined and uniformly echogenic pedicled endometrial polyp (P), originating from the anterior wall with vascular pedicle (arrow), in a 40-year-old woman.<sup>17</sup>

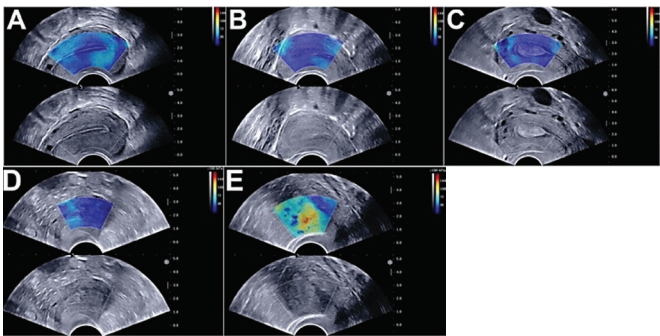


Figure 12 – Transvaginal ultrasound with and without elastography: Ultrasound image of the endometrium (proliferative) in figure A, showing elastography a uniform blue area in the endometrium. (B) Ultrasound image of the secretory endometrium showing a uniform blue area in the endometrium. (C) Pathological findings confirmed an endometrial polyp in the uterine cavity. (D) Pathological results confirmed hyperplastic endometrium in blue. (E) The pathological findings confirmed an endometrial cancer in the uterine cavity. Elastography showed tumor lesions of a mixture of red, yellow and blue.<sup>18</sup>

## CONCLUSION

Endometrial polyps are solid or mixed, iso or echogenic, circumscribed nodules that may show pedicle flow on Doppler, whose main differential diagnosis is submucosal myoma. However, other diagnoses can be considered depending on the appearance of the lesion, especially with regard to contours, when malignancy is suspected.

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