

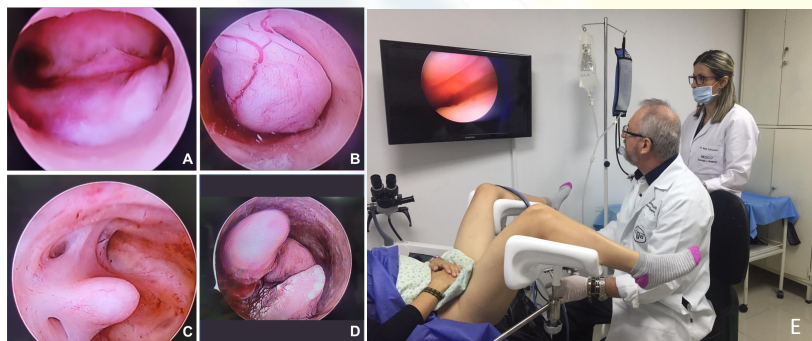
# Correlation between transvaginal pelvic ultrasound and office hysteroscopy for the diagnosis of endometrial polyps

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## Introduction

Endometrial polyps (EP) are one of the most common causes of abnormal uterine bleeding (10-40%); these are exophytic overgrowths of endometrial glands and stroma and are symptomatic in 56-88% of cases. The prevalence of EP in the general population is 7.8% to 34.9%.<sup>1</sup> The diagnosis is usually made with a transvaginal ultrasound, however the sensitivity and specificity of ultrasound for its diagnosis is not perfect, reporting that at least 30% of EP found on ultrasound are not visualized at the time of hysteroscopy.

Figure 1. Different types of polyps



Hysteroscopic images of polyps (A) Atrophic polyp (B) Glandular polyp (C) Multiple insertion polyp (D) Calcified pedunculated polyp (E) Office hysteroscopy set

## Objective

To describe the correlation between pelvic ultrasound and hysteroscopic findings in patients with an ultrasound or hysteroscopic diagnosis of endometrial polyp in a cohort of 10343 patients seen in an outpatient hysteroscopic center of care for patients from the health system, and to determine the performance of pelvic ultrasound for the diagnosis of EP in our setting and to assess how many of the polyps found were not suspected by ultrasound

## Methods

A retrospective observational study was carried out; data was collected from patients undergoing office hysteroscopy with the use of an oral NSAID 1 hour prior to the procedure, between April 2014 and March 2022 in the outpatient setting of the gynecological endoscopy unit of Soma Clinic in Medellín, Colombia. The prevalence of EP in the sample will be described. The sensitivity, specificity, positive and negative predictive value of pelvic ultrasound will be compared to the gold standard for the diagnosis of EP, which is the hysteroscopy. For the statistical analysis of the data, the SPSS software version 28.0.1.1<sup>®</sup> was used.

## Results

The mean age of the patients with EP was 44.37 years (SD: 11.53, 10-104), the prevalence of EP among all patients who underwent hysteroscopy was 32.1% (3320/10343). In Table 1, of the total number of patients evaluated in the unit, 32.39% (3351/10343) were seen for suspected EP based on ultrasound findings; of these patients, 50.67% (1698/3351) were found and 49.32% (1653/3351) weren't at the time of hysteroscopy (blue box). Similarly, of the patients diagnosed with EP by hysteroscopy, 51.14% (1698/3323) were suspected by ultrasound, while 48.86% (1625/3323) were not (Red box). Of the patients who underwent hysteroscopy for other indications, 23.92% (1625/6992) had EP even though ultrasound did not describe them. Based on this findings, ultrasound has a sensitivity and specificity for polyp detection of 51% and 76,4% respectively, with a positive and negative predictive value of 50% and 76,7% for each of them.

Table 1. Characteristics of patients diagnosis

Ultrasound visualized polyp	Hysteroscopic Finding		
	Polyp	Other	Total
Yes	1698	1653	3351
No	1625	5367	6992
Total	3323	7020	10343

## Discussion

The sensitivity and specificity of ultrasonography for the diagnosis of EP varies in a very wide range (Sensitivity 19% to 96% and specificity from 53% to 100%) (Table 2), in contrast to our study which reported a sensibility of 51% and a specificity of 76.4%. In summary, half of the EP are diagnosed without sonographic suspicion of their presence and when the ultrasound reports a EP only half will actually have the polyp. Since ultrasound is an operator-dependent tool, it is important to perform it in the first 10 days of the menstrual cycle when the endometrium is thinnest, to improve its performance.

Table 2. Other publications assesing performance of ultrasound

Year	Author	Sensitivity	Specificity
2005	Valenzano, et al <sup>2</sup>	21.7%	91.7%
2011	Salim, et al <sup>3</sup>	19% - 100%	53% - 100%
2015	de Godoy Borges <sup>4</sup>	88.7%	25.4%
2022	Al-Asadi <sup>5</sup>	100%	77.9%
2022	Xia <sup>6</sup>	90%	66.7%
2023	Buitrago et al	51%	76.4%

## Conclusion

EP are a prevalent condition that affects 3 out of 10 women in the cohort studied. The diagnostic method for the initial approach has traditionally been pelvic transvaginal ultrasound, however its performance compared to the gold standard is not as good, since only half of the patients with ultrasound suspicion will actually have this lesion at the time of hysteroscopic evaluation. For this reason, it is important to evaluate all patients with abnormal uterine bleeding with hysteroscopy, even when the ultrasound report is normal. Office hysteroscopy is the best method to study and treat patients with EP, with a resolution capacity in the same procedure greater than 80%.

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