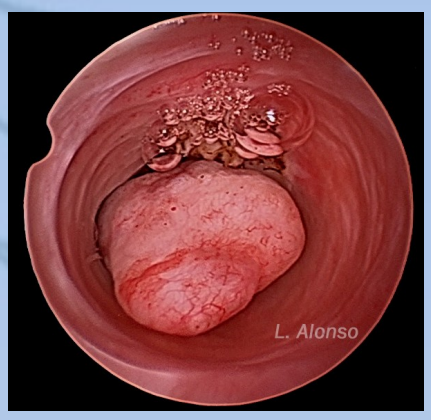
Hysteroscopy Newsletter

Vol 7 Issue 2



HYSTEROSCOPY Editorial teaM

Dear hysteroscopy friends,

In March 2015, I had the opportunity to write the first editorial for the Hysteroscopy Newsletter. What a great honor that was!!!

An excerpt from that editorial said: "Hysteroscopy Newsletter arises from the need to have a publication with which different professionals from all around the world share their work, comments and opinions about Hysteroscopy. A bimonthly publication arises with initial diffusion through the internet and with the valuable collaboration of relevant professors of the world of hysteroscopy "

7 years later, I look back and proudly contemplate how the Newsletter has evolved and grown in these long years without losing its true essence:
REAL HYSTEROSCOPY FOR EVERYONE

Free of charge, with no conflicts of interests, without industry advertising and always spreading scientific knowledge. An open forum for everyone: from the most world's recognized experts to the beginner hysteroscopists.

Reaching March 2021 has been posible thanks to the enormous effort of Luis Alonso, Tony Carugno and the collaboration of all of you, who have participated and continue to actively participate producing content for the Newsletter. That, added to the wide dissemination by word of mouth, through social media, etc ... have placed the Hysteroscopy Newsletter where it is right now. That is why I appeal to all hysteroscopy lovers: Let's keep this publication going and let's not stop spreading it, for many more years to come.

And finally, I would like to share a few words from Miches Serres that Dr. Agustín Rubal shared with us a few days ago, and that I think perfectly define the meaning of this publication: "If you have a loaf of bread and I have an euro, and I go and buy the bread from you, I will have a loaf of bread and you will have an euro, and you will see a balance in that exchange, that is: A has an euro and B has a loaf of bread conversely, B has the bread and A the euro. This, then, is a perfect balance. But if you have a Verlaine sonnet, or Pythagoras' theorem, and I have nothing, and you teach me, at the end of that exchange I will have the sonnet and the theorem, but you will have kept them. In the first case, there is equilibrium. That is merchandise. In the second, there is growth. That is culture."

That exactly it… is the real meaning of HYSTEROSCOPY NEWSLETTER

God bless you all

DRA. LAURA NIETO

If you are interested in sharing your cases or have a hysteroscopy image that you consider unique and want to share, send it to hysteronews@gmail.com

Endometrial Polyps: overview

Luis Alonso Pacheco / Ana Merino Marquez. Centro Gutenberg. Málaga. Spain

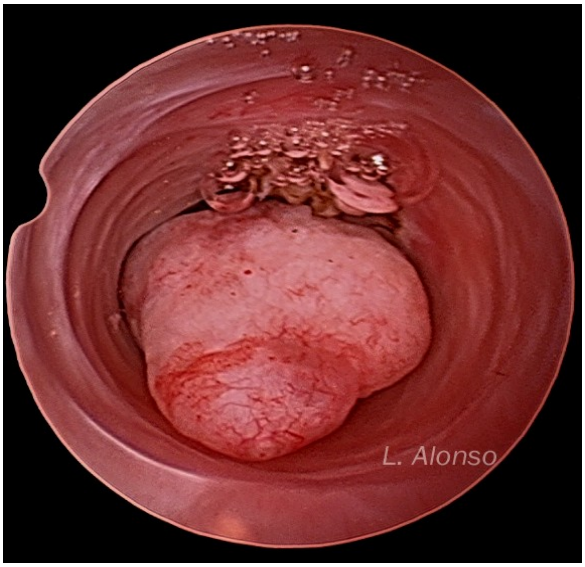
Endometrial polyps are areas of growth of endometrial tissue inside the uterine cavity. They are composed of stroma, glands and blood vessels coated by endometrial lining. Polyps are the most common endometrial pathology found on diagnostic hysteroscopy and represent a frequent cause of operative hysteroscopy.

They are usually benign in nature, although, when symptomatic, about 20% have small areas of hyperplasia being between 0.5% and 1% malignant.

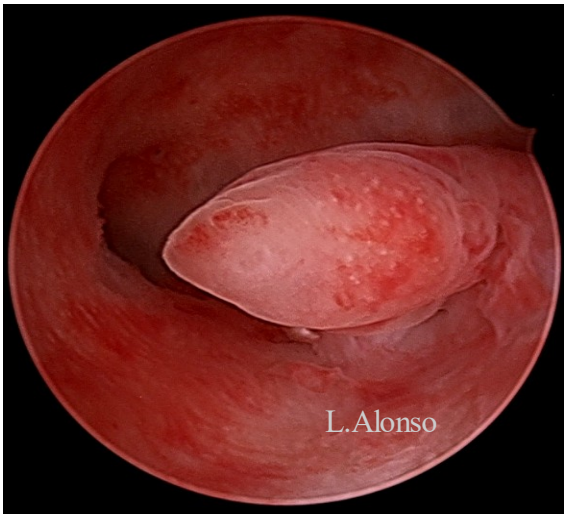
CLASSIFICATION

Endometrial polyps are classified as follows:

1-**Functional polyps** (20%): with similar histologic appearance to normal endometrium with secretory or proliferative changes. They are subdivided into glandular and fibrous, according to the predominant tissue.
2-**Hyperplastic** (35%): with histologic changes similar to those found in endometrial hyperplasia.
3-**Atrophic** (44%): with regressive or atrophic changes. These polyps are usually found in menopausal patients.
4-**Malignant** (1%): with the presence of cancer cells in the polyp.



There are two concepts that require special attention. The “malignant polyp” and the “pseudo-polyp”. The malignant polyp, a concept first described by Dr F. Coloma, refers to polyps with the presence of malignant cells but the base of the polyp as well as the rest of the uterine cavity are completely normal. The term “pseudo-polyp” refers to thickened areas endometrial polypoid like tissue, less than 1 cm in size that disappears after menstruation because they have no nutritive vessels to support them.



SYMPTOMS

Most polyps are asymptomatic and are usually diagnosed during a routine gynecological examination. If they become symptomatic, usually cause abnormal uterine bleeding, post-coital bleeding, mild pain and sometimes could cause infertility.

EPIDEMIOLOGY

Due to the increase use of transvaginal ultrasound and hysteroscopy in current clinical practice, endometrial polyps are more frequently diagnosed. It is estimated that are present in 1% of asymptomatic women and in about 25% of patients with abnormal uterine bleeding.

DIAGNOSIS

Once the presence of endometrial polyps is suspected, imaging studies are the most sensitive in the diagnosis of intrauterine pathology. Ultrasound is a commonly used imaging modality for the diagnosis of endometrial polyps by direct visualization of the polyp, color Doppler is often used for better visualization of its vascular supply. Often, endometrial polyps are suspected by the presence of increased endometrial thickening. Other techniques that may help in diagnosis are hysterosalpingogram and sonohysterogram. The completion of blind curettage can miss the presence of endometrial polyps in up to 10% of the cases.

The preferred modality for the diagnosis of endometrial polyps is hysteroscopy, in addition to the direct visualization of the polyp; it allows biopsy and even excision at the time of diagnosis.

Polyps are seen as areas of growth in the uterine cavity. Generally, they have a spongy surface with striking absence of vascular structures, which differentiates them from submucosal fibroids. They can be single or multiple, pedunculated or sessile, of different size and can be located anywhere in the uterine cavity.

TREATMENT

In general, it is recommended to excise any symptomatic polyp. If the polyps are asymptomatic, it seems appropriate to simply keep an expectant management, with serial ultrasound scans every 6 months to monitor their growth.

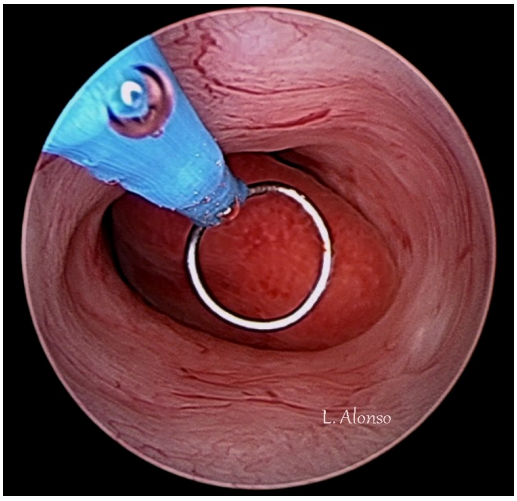
The technique for hysteroscopic polypectomy varies depending on the size of the polyp and the available hysteroscope. It is important to emphasize that endometrial polyps are growth areas derived from the endometrium, theydo not invade the myometrium.

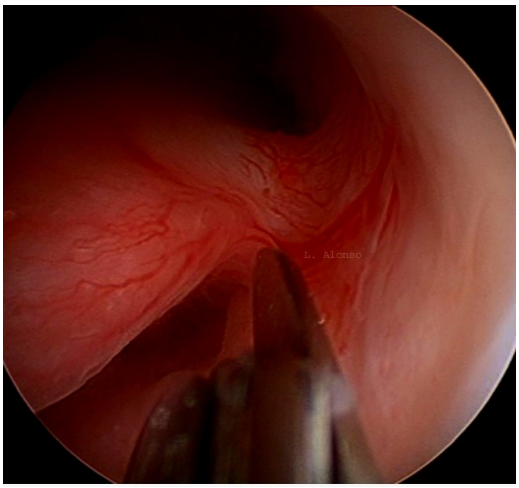
1- Mechanical hysteroscopic polypectomy is performed with hysteroscopic scissors or biopsy forceps. This modality is often used for small polyps and can be done in the office setting.

2-Hysteroscopic polypectomy with Versapoint® bipolar electrosurgery which allows cutting the base of the polyp. It is frequently used in cases of large polyps, they could be fragmented into small pieces facilitating the extraction.

3-Resectoscopic polypectomy: It requires cervical dilation. It is usually reserved for large polyps, often performed in the operating room under general anesthesia.

4-Polyps morcelator: new generation of devices that enable the fragmentation and ease extraction of the polyps.





POSTSURGICAL TIPS

Hysteroscopic polypectomy is a simple technique, which is usually done as an outpatient procedure. The patient may have light vaginal bleeding for several days after surgery, as well as mild discomfort that usually subside with the use of anti-inflammatory drugs (NSAIDs). Most patients return to their daily activities within 24 hours of the procedure.

Evaluation of the uterine cavity and diagnosis of endometrial polyps

Salvatore Giovanni Vitale, M.D. Ph.D.
Obstetrics and Gynecology Unit, Department of General Surgery and Medical Surgical Specialties, University of Catania, Catania, Italy.

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Endometrial polyps represent one of the most common gynecologic pathology frequently causing abnormal uterine bleeding and/or intermenstrual spotting, although the majority of patients with endometrial polyps are asymptomatic. Endometrial polyps are usually benign but the risk for malignancy should be considered when present in postmenopausal women, especially if causing vaginal bleeding. Expectant management is acceptable in some cases, however when symptomatic, large or multiple should be removed. Hysteroscopic polypectomy remains the gold standard modality for the diagnosis and management of the patients with endometrial polyps.

The incidence of surgical complications during hysteroscopic polypectomy is low, making hysteroscopic polypectomy a feasible and safe procedure.

The size of the polyps varies from few millimeters to several centimeters, and their morphology may be sessile with large or small implantation base or pedunculated. They consist of three elements: endometrial glands, stroma, and blood vessels. Known risk factors for the development of endometrial polyps are advanced age (30-50), hypertension, obesity, tamoxifen and hormone replacement therapy use, genetic conditions such as Cowden or Linch syndrome or chromosomal alterations (such as 6 and 20). The risk of developing endometrial polyp increases from menarche to the end of the reproductive age but it is still unclear the de-novo incidence of endometrial polyps during menopause. Endometrial polyps may be asymptomatic, and when causing symptoms, the most common clinical manifestations include abnormal (including postmenopausal, post coital or spotting) uterine bleeding and less commonly infertility.

Rarely polyps of the uterine body, especially of certain volume, trigger in a “reflex way” uterine contractions that displace them progressively towards the cervix, causing at times, their complete expulsion from the cavity with subsequent pain and bleeding.

From a histological point of view we can distinguish hyperplastic, functional, adenomyomatosis with and without atypia, atrophic and pseudopolyps with different clinical therapeutic implications.

Malignant transformation is rare and occurs in 0% to 12.9% of cases. There are several options available for the diagnosis of endometrial polyps.

TRANSVAGINAL ULTRASONOGRAPHY (TVUS)

The primary tool for initial diagnosis of endometrial polyps is transvaginal ultrasonography (TVUS). Endometrial polyps appear as a hyperechogenic lesion with regular contours. Cystic glands may be visible within the polyp. Endometrial polyps are seen as a focal mass or nonspecific thickening of the endomeytrium. These findings, however, are not specific to polyps as leiomyomas (fibroids) particularly submucosal forms may have the same features.

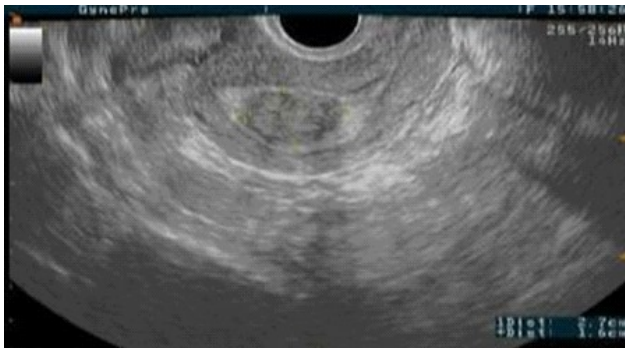


Figure 1. Transvaginal ultrasound image of a large endometrial polyp in uterine cavity.

Compared to 2D ultrasonography (TVUS) (Figure 1), 3D TVUS with color-flow Doppler has a higher diagnostic accuracy by enhancing endometrial and sub-endometrial vascularization indices; moreover combining endometrial echogenicity, thickness, and volume with 3D TVUS (Figure 2) is better than single measurements with 2D TVUS for detecting endometrial polyps.

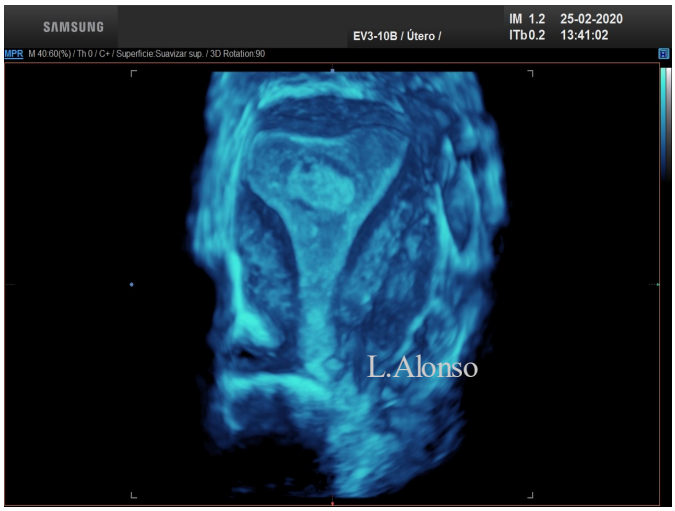


Figure 2. 3-dimensional transvaginal ultrasound image show endometrial polyp in back wall of uterine body.

To obtain the higher diagnostic accuracy, ultrasonographic examination should be carried out during the proliferative phase of a menstrual cycle. Indeed, TVUS has a reported wide sensitivity range from 19% to 96% and a specificity between 53% to 100%, with a positive predictive value (PPV) from 75% to 100%, and negative predictive value (NPV) from 87% to 97% for the diagnosis of endometrial polyps when compared to hysteroscopy and targeted biopsy. A paucity of level I evidence, as well as studies with small sample size, could explain this broad spectrum of data. In a single, large, level II-2 study the reported sensitivity, specificity, PPV, and NPV of TVUS was 86%, 94%, 91% and 90%, respectively.

SALINE INFUSION SONOGRAPHY (SIS) OR SONOHYSTEROGRAPHY (SHG)

Saline infusion sonography (SIS) or Sonohysterography (SHG) is well tolerated by patients and frequently performed when the endometrium on TVUS is abnormal. A small catheter is placed first into the uterine cavity through the cervical canal, and a small amount of normal saline solution is instilled using a syringe into the uterine cavity while performing a TVUS. The normal saline provides a contrast medium, so focal lesions of the endometrium are easily identified. Compared to TVUS alone, saline infusion sonohysterography seems to be little superior to simple TVUS for the diagnosis of intrauterine pathology. Using this technique the polypoid formations are seen as complete mobile intracavitary hyperechoic lesions during fluid injection (Figure 3).

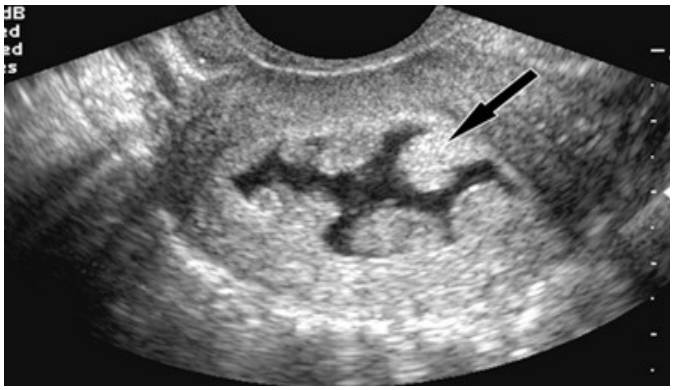


Figure 3. After instillation of saline can be better distinguished multiple polyps occupying uterine cavity.

HYSTEROSCOPY

Among the diagnostic methods for investigating endometrial disease, hysteroscopy has the highest diagnostic efficacy. Hysteroscopy with guided biopsy represent the gold standard in the diagnosis of endometrial polyps (Figure 4). The main advantage of hysteroscopy is the ability to visualize and remove polyps concurrently.

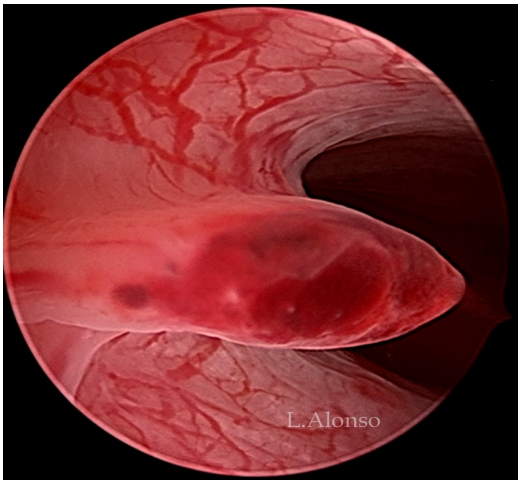
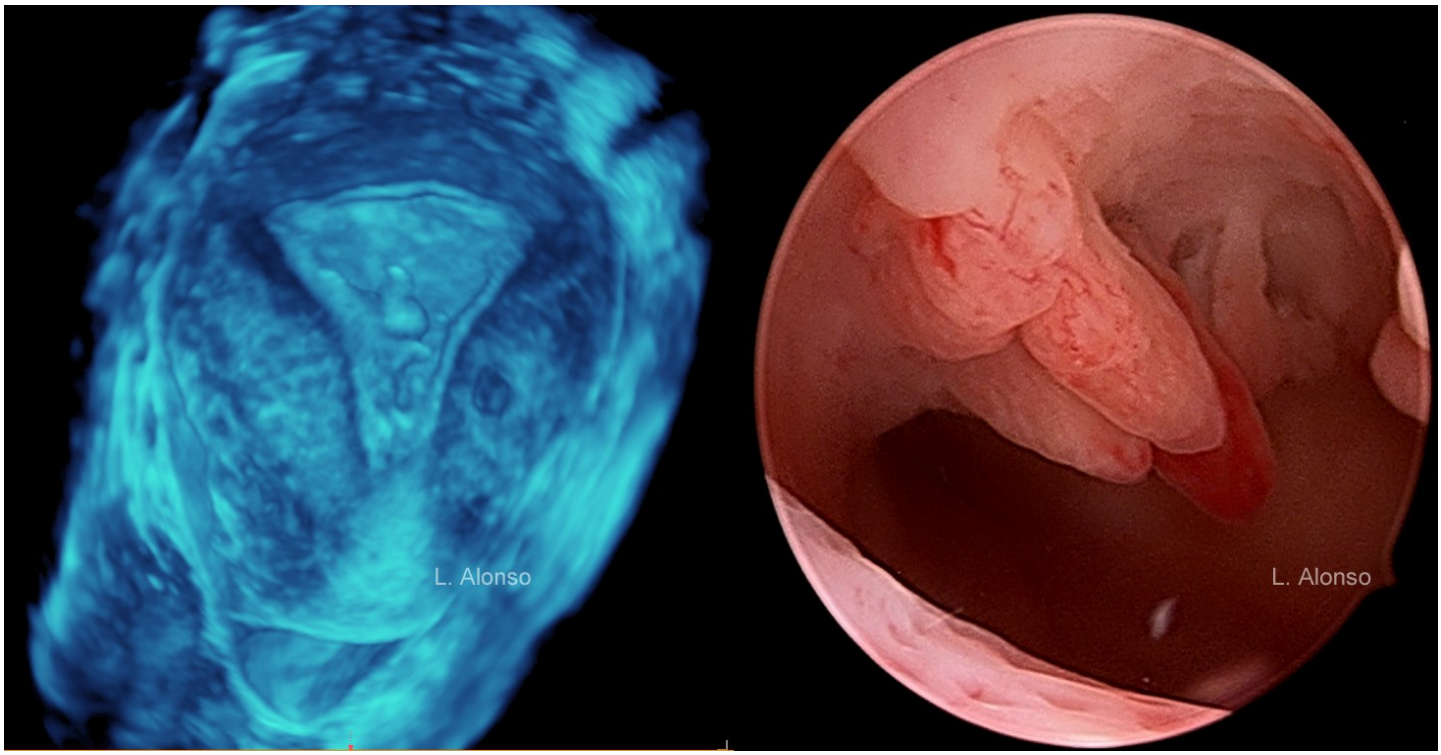


Figure 4. Using a hysteroscope, a pedunculated endometrial polyp is highlighted on the lateral wall of the uterine body



3D ultrasound / Hysteroscopy correlation in case of endometrial polyp

Diagnostic hysteroscopy alone (without additional biopsies) allows a subjective assessment of the size and characteristic of the lesion with reported sensitivity of 58% to 99%, specificity of 87% to 100%, PPV of 21% to 100%, and NPV of 66% to 99% when compared to hysteroscopy with guided biopsy.

It is important to include in the hysteroscopic evaluation of endometrial polyps some characteristics such as: number, size, location, consistency, vascularization and implant base, all characteristics that can be achieved by the gold standard of hysteroscopy.

MAGNETIC RESONANCE IMAGING (MRI)

Magnetic Resonance Imaging is moderately sensitive to detect endometrial polyps, demonstrating features that are not sensitive but may be specific such as dense fibrous tissue stroma, which reflects a dark T2 fibrous core; thick-walled vascular channels, corresponding to avid enhancement and endometrial glands, corresponding to intra-tumoral cysts. The predominant T2 signal intensity of polyps has been shown to be similar to the underlying endometrium.

In a retrospective study, which analyzed the characteristics of endometrial polyps in 40 patients undergoing pelvic MRI, the predominant signal intensity on the T2-weighted image (T2WI) was point to hypointense for the underlying endometrium. Hricak et al, in a study analyzing the detection and characterization of endometrial lesions on MRI, showed signal intensity indistinguishable from normal hyperintense endometrium on T2WI in 7 of the 7 endometrial polyps. Another key feature is size, as polyps smaller than 5 mm can be very difficult to distinguish from the adjacent endometrium. So, MRI is not typically obtained to evaluate endometrial polyps.

Hysteroscopic Classification of Endometrial Polyps

Alicia Úbeda. Hospital Universitari Quirón Dexeus. Barcelona. Spain

Despite being a highly frequent finding on hysteroscopic examination, classifying endometrial polyps has never aroused real interest. Possibly, the ease with which hysteroscopic diagnosis and treatment are accessed has been discouraging scientists to work on it, even though endometrial polyps are a proven cause of abnormal bleeding or subfertility (1,2,3).

To date, there is no publication that, solidly and from a hysteroscopic point of view, has ventured to classify endometrial polyps. I can think of two possible reasons:

- The diagnosis has been traditionally based on ultrasound findings.

- Classification systems, in the case of other pathologies, such as submucosal myomas or intrauterine adhesions, were created with the objective of correlating extension or severity with the clinical and / or reproductive outcomes or the probability of recurrence.

A functional classification was previously published in Hysteroscopy Newsletter (vol 1 Issue 3) however, this classification is not considering symptoms or risks of recurrence (Table 1).

Functional or Typical (20%)	Similar in appearance to normal endometrium
Hyperplastic (35%)	With changes that indicate accelerated growth
Atrophic (40%)	With changes with a tendency to regression, these are the polyps that we usually find in menopausal patients
Malignant (1-5%)	With cancer cells in the polyp

Table 1. Endometrial polyps classification

The FIGO in 2011 includes them as a cause of Abnormal Uterine Bleeding, and although in the same publication it introduces a classification of uterine fibroids, it does not do so with endometrial polyps (4).

Endometrial polyps have also been categorized according to (5):

• **The base of implantation:** sessile or pedunculated. (Fig 1)

• **The location** of the implantation site: fundal, cornual, lateral walls, anterior wall, posterior wall or isthmus. (Fig 2)

• **The number**: single or multiple. (Fig 3)

• **The shape:** spherical or cylindrical.

• **The histology:** simple endometrium, hyperplasia (with or without atypia) or neoplasia. (Figs 4 and 5)

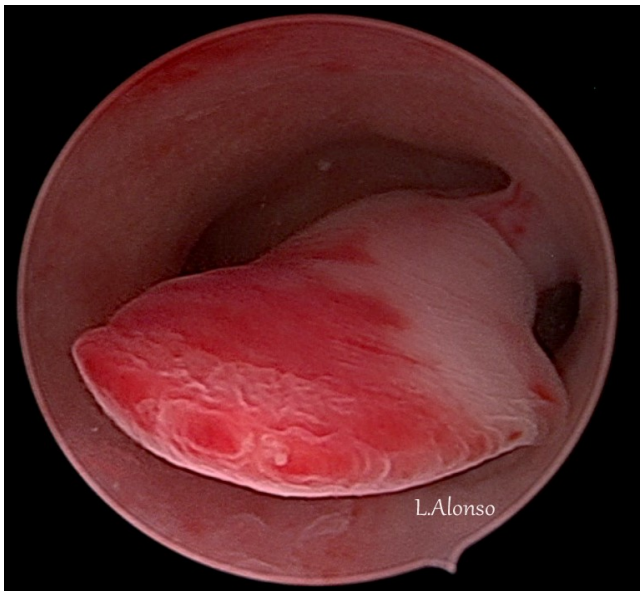


Fig 1. Pedunculated endometrial polyp located on the left cornual region

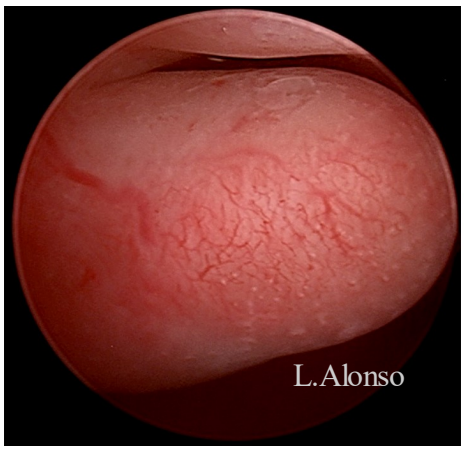


Fig 2. Polyp on the right lateral uterine wall.

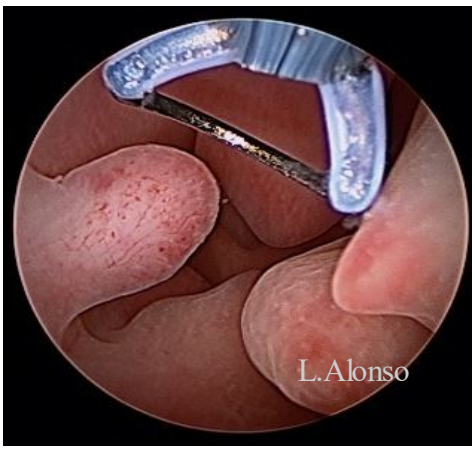


Fig 3. Multiple endometrial polyps.

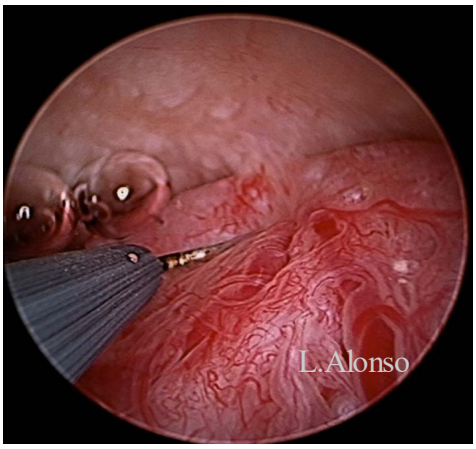


Fig 4. Neoplastic changes in an endometrial polyp.

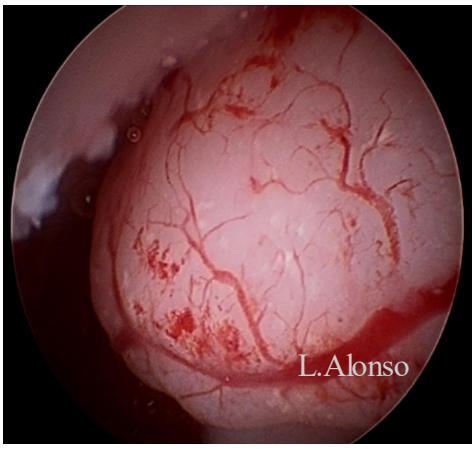


Fig 5. Neoplastic endometrial polyp.

In any case, it has been demonstrated that the best diagnostic tool for the diagnosis and management of endometrial polyps is hysteroscopy compared to ultrasound or hysterosonography in a meta-analysis of 11 studies of adequate design (6).

Based on clinical criteria, recurrence rate and histology, and as a personal proposal for a simple classification, endometrial polyps, they could be classified as:

TYPE	
I	Benign, single or multiple (less than 4 and asymptomatic)
II	Benign, multiple > 4 and symtomatic (infertility or abnormal uterine bleeding))
III	Benign, with a polypoid base
IV	Hyperplastic or cancer

It has been shown that the greater the number of polyps and the longer the follow-up time (especially after two years), the higher the recurrence rate. Also, if they arise from an aberrant endometrium (hypertrophic or hyperplastic) the recurrent rate is higher (7). Regarding treatment, mechanical techniques have a higher recurrence rate than electrical techniques because they do not effectively resect the basal endometrial layer (8). The location does not seem to affect the recurrence rates or the presence or absence of symptoms, so it has not been included in the proposed classification system (9).

REFERENCES

1-Peterson WP, Novak ER. Endometrial polyps. Obstet Gynecol 1956;8(1):40-49. 2-Dreisler E, Stampe Sorensen S, Ibsen PH et al. Prevalence of endometrial polyps and abnormal uterine bleeding in a Danish population aged 20-74 years. Ultrasound Obstet Gynecol 2009;33(1):102-108. 3-Perez-Medina, T., et al. (2005). "Endometrial polyps and their implication in the pregnancy rates of patients undergoing intrauterine insemination: a prospective, randomized study." Hum Reprod 20(6): 1632-1635.. 4- Munro, M. G., et al. (2011). "The FIGO classification of causes of abnormal uterine bleeding: Malcolm G. Munro, Hilary O.D. Critchley, Ian S. Fraser, for the FIGO Working Group on Menstrual Disorders." Int J Gynaecol Obstet 113(1): 1-2.5-Nijkang NP et al. SAGE Open Med 2019;7:2050312129848247. 6- , Kaveh, M., et al. (2020). "Comparison of diagnostic accuracy of saline infusion sonohysterography, transvaginal sonography, and hysteroscopy in evaluating the endometrial polyps in women with abnormal uterine bleeding: a systematic review and meta-analysis." Wideochir Inne Tech Maloinwazyjne 15(3): 403-415.. 7-Yang, J. H., et al. (2015). "Factors Influencing the Recurrence Potential of Benign Endometrial Polyps after Hysteroscopic Polypectomy." PLoS One 10(12): e0144857. 8 Preutthipan, S. and Y. Herabutya (2005). "Hysteroscopic polypectomy in 240 premenopausal and postmenopausal women." Fertil Steril 83(3): 705-709. 9-Paradisi R et al. Recurence of endometrial polyps. Gynecol Obstet Invest. 2014;78:26-32.

Endometrial polyps and IVF

Jamal Fikri. Head of ART unit clinic Al Boustane-Rabat-Morocco

INTRODUCTION

In the field of ART, the results in term of live birth rate increased progressively with the introduction of GnRH analogues, new and safer stimulation protocols , improvement of embryo culture conditions leading to good quality embryos and their replacement under ultrasound guidance.

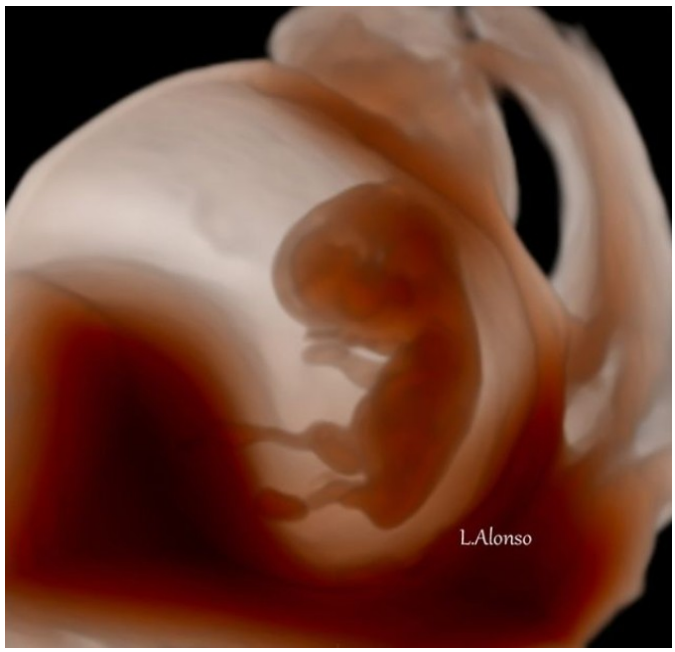
However, the implantation rate is fare to be satisfying as more than 10 embryos are still needed to achieve one birth. The delivery rate is between 19.8 to 32.2 % for fresh cycles and the cumulative live birth rate reach 23.5 to 48.7 % (ICMART)

The development of PGT-A allowing the transfer of euploid embryos did not resolve the problematic of implantation failure which is actually the major challenge to address to make ART more efficient in order to shorten time to pregnancy. Indeed, the drop of rate is high even when the health care system offers many free off charge attempts. (1)

Intra uterine pathologies are very common in infertile patients and the rate is as high as 22.9 % (2). Polyps are very common in general population and particularly in case of abnormal uterine bleeding. The prevalence is estimated to be 20-30 %.

Endometrial polyps are mostly an incidental finding in subfertile patients. The incidence is thought to range from 15 to 25 % in this population but the relationship remains uncertain. In the specific group of patients undergoing IVF/ICSI polyps are detected in wide range between 6 to 32 % and are more frequent in patients of advanced age or with otherwise endometriosis (3, 4).

Plausible mechanisms of polyps-subfertility association are lacking of strong evidence. It may be inflammation, sperm transportation disturbance, embryo implantation alteration and inflammation. Some genes expression and protein production involved in embryo implantation are impacted by the presence of polyps.



Embryos normally implant in the uterine cavity and its assessment is of critical importance to search for any pathology that could impair implantation. Of the various methods available for assessment of uterine cavity, hysteroscopy is the gold standard (5).

ENDOMETRIAL RECEPTIVITY AND UTERINE PATHOLOGIES

Many pathologies frequently encountered in infertile patients cause structural changes of the uterine cavity that could impair implantation. An other important contributor to endometrial receptivity which is impacted by those pathologies is uterine contractility.

When arriving into the uterine cavity, the embryo needs to find a favourable milieu in particular a rigorously synchronised endometrium allowing an efficient cross talk leading to implantation and favourable early embryo development.

During the menstrual cycle, endometrial development is set by exposure to estradiol during

about 2 weeks and when the ovulation occur progesterone is released and promotes the complex process of decidualization. Beyond the classical histopathologic changes there is a complex and rigorously coordinated set of molecular events that are playing a major role in endometrial receptivity. Among them:

- Homeobox(HOX) genes and particularly HOX-A10 and HOX-A11 plays a crucial role in the implantation process. Both are expressed in the endometrium during the proliferative phase of the cycle under the influence of progesterone and influence downstream factors influencing endometrial receptivity by activating or repressing target genes.

- Increase production of prostaglandins and vascular epithelial growth factors (VEGF)

- Extravasation of immune cells, particularly macrophages and natural killer (NK) cells

- Pantopods and cell adhesion molecules such as integrins and osteopontin are expressed at endometrial surface.

Many intra uterine pathologies disrupt this complex process leading to embryo implantation and early embryo development (4) In the mid-secretory phase the presence of polyps is associated with decreased levels of IGFBP-1, TNF, osteopontin and glycodelin which are reversed after hysteroscopic polypectomy. HOXA-10 and HOXA-11 a major genes involved in endometrial receptivity shows an altered expression (6,7,8,9).

A recent study(10) reported 92.8 % of chronic endometritis proven by immunohistochemistry analysis of the plasma cell biomarker CD138 and reported high rate of recovery after polypectomy with and without added antibiotic treatement.

UTERINE CAVITY ASSESSMENT

Intrauterine pathologies are present in 10 % of patients seeking fertility (5) to 43.3 % of infertile patient scheduled for IVF/ICSI with otherwise normal HSG and TVS findings (11)

Karayalcin (2) carried ou a very large prospective study comprising 2500 patients scheduled for IVF/ICSI. Hysteroscopy was performed for each one and revealed 22,9% of abnormalities. The most frequent pathology encountered are polyps 7,68%, fibroids 3,84%, polypoid endometria 1,24%, intrauterine adhesions 1,08% and uterine septa 2,92%.

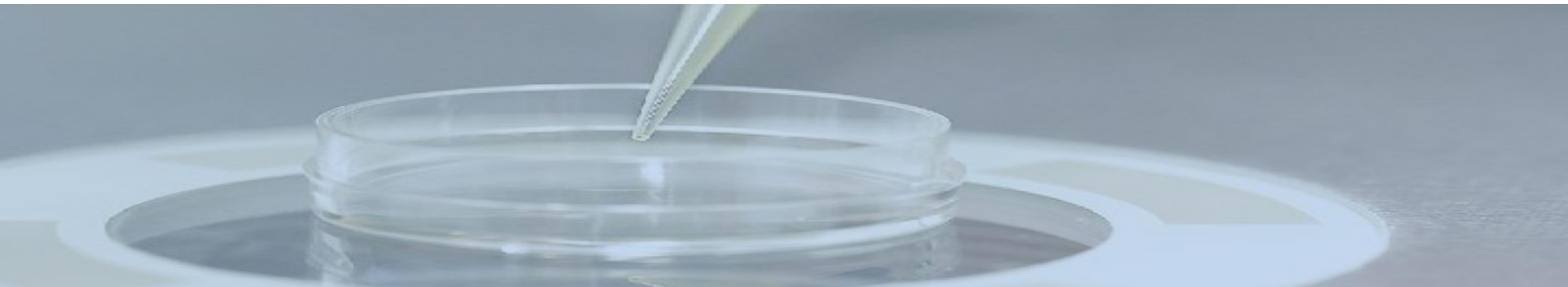
Kilic Y. (12) in a non-randomized prospective study reported 41% of anomalies detecteed by hysteroscopy in patients with otherwise normal HSG and TVUS. Polyps represent about half of those pathologies.

Those pathologies are likely to cause adverse reproductive outcomes because they interfere with sperm transportation and embryo implantation or increase abortion rate.

Transvaginal sonography (TVS) is the most available and the natural continuation of any genital tract exam. It's cost effective tool to assess the uterus allowing the visualization of its external contour, the myometrium and the endometrial lining and blood flow. TVS have a sensitivity of 84 to 100 % and specificity of 96.3 to 98 % for diagnosing uterine pathology. The accuracy is enhanced by the use of saline infusion sonohysterography (SIS) to improve the diagnosis of endometrial disease (13).

HSG is a part of initial workup in infertility but is considered very painful and invasive technic and have some limitations. Its sensitivity is 75.21 % and specificity is 41.14 % when compared to hysteroscopic findings (cross sectional study) (14). In retrospective study including 359 consecutive patient undergoing IVF, Taskin (9) compared HSG findings to hysteroscopy and found that HSG have a false negative rate of 78.43 % and false positive rate of 16.23 % (15).

TVS is the first line procedure to assess the uterine cavity and when coupled with SIS the accuracy improves. In prospective, blind, controlled study, Grimbizis (16) compared the performances of TVS, SIS and diagnostic Hysteroscopy in the detection of intracavitary lesions. Using the ROC



curve analysis, the comparison of the areas under the curve shows that Hysteroscopy has a statistically significant accuracy for the diagnostic of any endometrial pathology than TVS and SIS (AUCs: TVS=0.725, SIS=0.759, H=0.953) and particularly for myomas and polyps which represent the main pathological condition encountered in infertile patients undergoing ART. Noting that SIS was found to be more accurate than TVS. Sensitivity was 89.04 % for TVS, 91.78 % for SIS and 97.26 % for Hysteroscopy ; Specificity was 56.00 % for TVS, 60.00 % for SIS and 92 % for Hysteroscopy.

A prospective cohort study found that the accuracy of 2D TVS is insufficient with low sensitivity. Area under the ROC curve (AUROC) was 70.69% for the accuracy of TVS compared to OH (17). The Practice Committee of the American Society for Reproductive Medicine consider hysteroscopy as the method of choice for the evaluation of the uterine cavity (5). Most of the intrauterine pathologies can be accurately diagnosed by hysteroscopy and treated simultaneously in an office setting.

POLYPS AND SPONTANEOUS FERTILITY

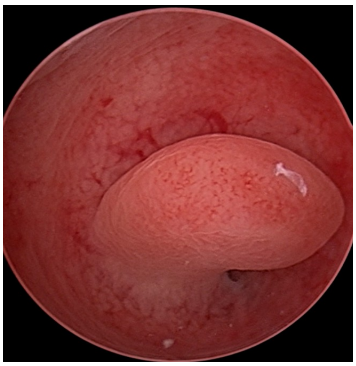
Results of many studies suggests that patients with otherwise unexplained infertility may benefit from hysteroscopic polypectomy. Shokeir et al. (18) reported a 50 % spontaneous pregnancy rate after polypectomy in such patients.

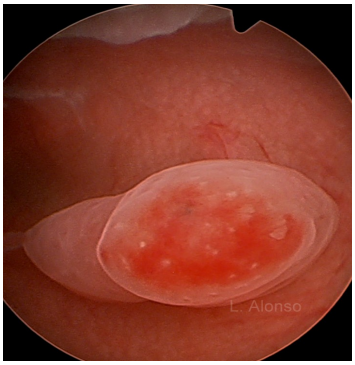
POLYPS AND IUI

For patient undergoing IUI and presenting endometrial polyps two randomised controlled trials demonstrated a significant improvement in pregnancy rate among the polypectomy group than the expectant group. Perez-Medina (19) randomized 215 infertile women, with ultrasonographically diagnosed endometrial polyps undergoing IUI, to either hysteroscopic polypectomy in the study group or diagnostic hysteroscopy and polyp biopsy in the control group. The cumulative pregnancy rate after four IUI cycles was 51.4% in the study group and 25.4% in the control group (P<0.001) and 65% of the pregnancys in the study group were obtained before the first IUI cycle. Another randomized trial carried out by Shohayeb A. reported similar findings (20).

POLYPS AND IVF/ICSI

Classically, when polyps are detected prior the commencement of ovarian controlled hyperstimulation, the vast majority of ART centres recommend to perform hysteroscopy and removal of the polyps if found.





When detected during IVF cycle, the data regarding the impact of endometrial polyps on IVF outcomes are conflicting.

Lass A.(21) investigated retrospectively 83 women with ultrasonographically identified polyps <2 cm and divided them in two groups before oocyte retrieval during IVF. Forty- nine women completed the standard IVF and embryo transfer treatment, and 34 women underwent hysteroscopic polypectomy immediately after oocyte retrieval and the embryos were cryopreserved and transferred in a subsequent cycle. Both groups showed similar pregnancy rate to those obtained in the same period in the ART center but higher pregnancy loss was observed in the group with polyps left in place. *(27.3 vs 10.7%, P = 0.08)*

In retrospective study, Isikoglu M.(22) compared 15 patients with polyps < 15 mm diagnosed during ovarian stimulation and left in place (group 1) to 40 patients who underwent hysteroscopic polypectomy and the ICSI cycle was performed in the subsequent cycle (group 2) and 956 patients without polyp (group3). There was no difference between groups in terms of clinical pregnancy rate and implantation rate and concluded that the presence of endometrial polyps <15 mm does not affect the outcomes of ICSI cycles.

Polypectomy during IVF without cycle cancelation seems to be an alternative. Madani T.(23) reported

a serie of 9 polypectomy followed by fresh embryo transfer resulting in 5 pregnancies (4 ongoing and 1 blighted ovum). In another case serie (24) of 6 patients who underwent polypectomy using cold loop without cycle cancellation reported 3 ongoing pregnancies.

DOES HYSTEROSCOPIC POLIPECTOMY AFFECT ICSI OUTCOMES?

In case control study Yang j.(25) compared 56 patients with endometrial polyps diagnosed during ICSI cycle who benefits from hysteroscopic cold loop polypectomy and embryo transfer in subsequent cycle to 112 matched randomly selected controls with fresh embryo transfer. The pregnancy rate was higher in the polypectomy group (63 % versus 41 %, p=0.009). Comparing fresh to frozen embryo transfer was the main limitation of the study but the results exclude any harmful effect of polypectomy when done properly.

Many studies reported conflicting results on the effect of polypectomy on IVF outcome, lot of them are small series including only small polyps, with different design and the use of hysteroscopy to confirm the diagnostic of polyp was not systematic.

In case of **repeated implantation failure**, polyps are also prevalent representing up to 20–25% of the intrauterine anomalies found in this setting. 2 RCT not specifically addressing endometrial polyps (Demirol 26, and Ramaraju 27) and comprising respectively 421 and 520 patients reported significant improvement of Clinical pregnancy rate after hysteroscopic correction of the anomalies found. In contrast the TROPHY(28) study failed to demonstrate any benefit. The most recent systematic review and meta-analysis

TIMING OF HYSTEROSCOPIC POLYPECTOMY PRIOR TO IVF

Although the current data overall support resection of endometrial polyps prior to fertility treatments, the optimal timing for surgical intervention is not clear. One study looking at greater than 6months and less than 6 monthsinterval between hysteroscopic polypectomy and IVF found no difference in outcomes, including clinical pregnancy rate (29). Similarly, a more recent study demonstrated that starting IVF after one, two, or more than three menstrual cycles following hysteroscopic polypectomy made no difference in terms of clinical pregnancy or live birth rates (30)

In systematic review published in 2018, the positive effect of polypectomy on IUI outcome was confirmed, but for IVF/ICSI a trend of improvement is reported but no firm conclusion could be drawn (31).

CONCLUSION

Hysteroscopy is definitely the gold standard method to assess endometrial cavity allowing an accurate diagnosis of endometrial polyps which are the most common pathology encountered when investigating infertile patients particularly those in advanced age. Despite conflicting data regarding its systematic use of hysteroscopy prior to attempt ART procedures, there's strong rational of the potential benefit of hysteroscopic polypectomy particularly in an office setting.

Given that hysteroscopic polypectomy is a minor surgical procedure with negligible intraoperative and postoperative complications and because it may have an added benefit due to cervical dilation and/or endometrial disruption are additional reason to perform this therapeutic procedure.

The monetary cost of IVF, particularly when there is limited or no insurance coverage, is substantial; yet, this does not take into account the emotional and physical toll of repeated IVF cycles, which should also be factored into the cost of not optimizing an IVF cycle by evaluating for and treating intrauterine pathology prior to embryo transfer

Numerous RCT and systematic review highlighted an improvement of ART outcomes and let's keep in mind that the correction of any intracavitary anomaly may lead to possible spontaneous pregnancy over time.

REFERENCES

1- Brandes, M., et al. (2009). "When and why do subfertile couples discontinue their fertility care? A longitudinal cohort study in a secondary care subfertility population." Hum Reprod 24(12): 3127-3135. 2- Karayalcin, R., et al. (2010). "Results of 2500 office-based diagnostic hysteroscopies before IVF." Reprod Biomed Online 20(5): 689-693 3- Di Spiezio Sardo, A., et al. (2015). "Hysteroscopy and treatment of uterine polyps." Best Pract Res Clin Obstet Gynaecol 29(7): 908-919. 4- Al Chami, A. and E. Saridogan (2017). "Endometrial Polyps and Subfertility." J Obstet Gynaecol India 67(1): 9-14. 5- Practice Committee of the American Society for Reproductive, M. (2015). "Diagnostic evaluation of the infertile female: a committee opinion." Fertil Steril 103(6): e44-50. 6- Munro, M. G. (2019). "Uterine polyps, adenomyosis, leiomyomas, and endometrial receptivity." Fertil Steril 111(4): 629-640. 8- Perez-Medina, T., et al. (2005). "Endometrial polyps and their implication in the pregnancy rates of patients undergoing intrauterine insemination: a prospective, randomized study." Hum Reprod 20(6): 1632-1635. 9- Nijkang, N. P., et al. (2019). "Endometrial polyps: Pathogenesis, sequelae and treatment." SAGE Open Med 7: 2050312119848247. 10- Kuroda, K., et al. (2021). "Analysis of the therapeutic effects of hysteroscopic polypectomy with and without doxycycline treatment on chronic endometritis with endometrial polyps." Am J Reprod Immunol: e13392. 11- Elsetohy, K. A., et al. (2015). "Routine office hysteroscopy prior to ICSI vs. ICSI alone in patients with normal transvaginal ultrasound: a randomized controlled trial." Arch Gynecol Obstet 291(1): 193-199. 12- Kilic Y. Arch.gynecol.Obstert.2013. 13- Practice Committee of the American Society for Reproductive, M. (2015). "Diagnostic evaluation of the infertile female: a committee opinion." Fertil Steril 103(6): e44-50. 14- João S.L. Cunha-Filho et al. « Accuracy of hysterosalpingography and hysteroscopy for diagnosis of intrauterine lesions in infertile patients in an assisted fertilization programme". Gynaecological Endoscopy . Volume ;February 2001.Pages 45-48 click for more...

In-office Hysteroscopic polypectomy

Carlos Arturo Buitrago Duque. Universidad Pontificia Bolivariana, Medellín Colombia. .

Since the year 2000, hysteroscopy has been considered the gold standard for the evaluation of the uterine cavity and allows diagnosis, treatment and to obtain pathological sample to be studied in a single procedure (1,2). Suspicion of endometrial polyps (EP) (Figure 1) requires visual verification for which blind diagnostic and therapeutic procedures are of no use (3,4).

In-office hysteroscopy is performed entirely in an office setting without any sedation or medication during the procedure. Developed by Dr. Stefano Bettocchi since 1995, thanks to the miniaturization and changes in the design of the hysteroscopy equipment available up to that time, generating significant time and cost savings in the management of the pathology of the uterine cavity (5).

With the development of working instruments with monopolar, bipolar, laser and electro-mechanical energy (morcellators), the number and complexity of the hysteroscopic treatments that can be performed in the office setting have increased (6,7).

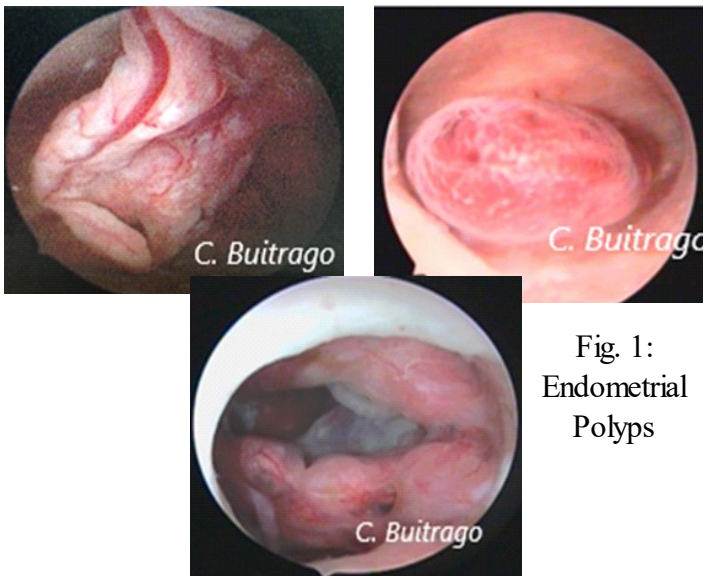


Fig. 1: Endometrial Polyps

HYSTEROSCOPIC UNITS

Today's office hysteroscopy units can be classified into (Figure 2): (3)

Low complexity services:

These are those that have the basic equipment, which consists of:

- Gynecologist with only basic training in hysteroscopy.
- Medical Assistant.
- Hysteroscopy with operating channel.
- Mechanical instruments (scissors and grasper)
- Equipment for irrigation and evacuation of the distension medium.
- Monitor and image capture system.

In this type of service, almost 100% of the diagnoses can be performed, taking endometrial biopsies and it can be therapeutic in 30 to 40% of cases with structural pathology.

High complexity services:

These require in addition to the above mentioned, the following:

- Gynecologist with training in advanced hysteroscopy
- Electrosurgical energies with miniaturized working elements (from 5 to 16 Fr), lasers, hysteroscopic morcellators, miniresectoscopes, etc.

Finally, the complexity of the procedures performed in the office, including polypectomy, will depend on the skill of the hysteroscopist, the technology available, and the patient pain tolerance. Therefore, there is no specific measure that limits the decision to do it in the office, although the difficulty of the procedure is directly related to the size of the polyp.

TYPES OF POLYPECTOMIES

The polypectomy can be performed in the following ways (Figure 3)

1. Resection with grasper.
2. Resection with scissors.
3. Resection with monopolar or bipolar energy electrodes.
4. Laser resection.
5. Resection with a mini-resectoscope
6. Resection with a morcellator.

Fig. 2 Low complexity service

1. Grasper resection: it is the simplest and most frequently used method for resection of small EP generally of less than one centimeter in size, preferably with a pedicle, very useful also for the excision of atrophic EP of postmenopausal patients in which the polyps are easily detached without causing bleeding. The technique consists of firmly grasping the base of the polyp and making lateral or cephalic traction that allows visualizing and controlling the complete detachment, later the entire hysteroscope is extracted (without retracting the grasper into the operating channel), visualizing the passage through the canal.

2. Resection with scissors: It is recommended to cut with scissors from the base of the polyp to avoid recurrences. If the size of the cervical orifice is exceeded by the polyp, it is suggested to thin or fragment the polyp with cuts before resecting the base. After its release, a grasper clamp or preferably a hysteroscopic tenaculum is passed for its extraction together with the hysteroscope, verifying the passage of the pathology through the canal.

3. Resection with energy

a. Monopolar: It is characterized by its low cost. Its advantages are the low generation of bubbles during activation on the tissue, however, it requires the use of non-electrolytic distension means which increases the risk of complications associated with hypotonic solutions, although for the office setting, this risk is negligible. It forces the use of a grounding pad on the patient with the associated risk of thermal injury.

b. Bipolar: Currently they are the preferred energy systems for use in hysteroscopic surgery both in the office and in the operating room. This type of electrosurgical energy can be used in the office setting with 5 Fr electrodes through the working channel or with miniresectoscopes up to 13 Fr.

Hysteroscopic 5 Fr electrodes.
Advantages: Excellent in the office, they allow hemostasis and provide clean cuts, there is no need to change instruments.

Disadvantages: Produces a large amount of bubbles, does not ensure the extraction of the specimen from the endometrial cavity, can cause damage due to burns or perforations.

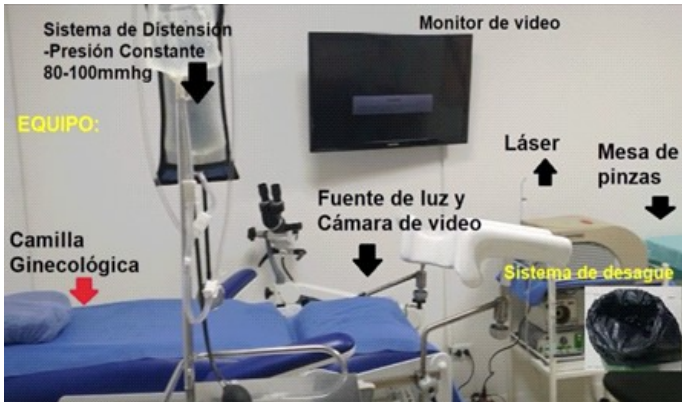


Fig. 2 High complexity service

4. Laser resection: The use of laser in hysteroscopy is not new, however, it is only over the last 10 years that it has been gaining an important role in hysteroscopic surgery. CO2, Nd: YAG, KTP, He: Ne, argon lasers have been used, and recently diode lasers which seem to be the most versatile and cost effective compared to other types of lasers and the one with the greatest amount of scientific evidence for its use for the management of polyps and submucosal myomas. The diode laser has a wavelength of 980 to 1470 nm, a spectrum that gives it a special affinity for water and hemoglobin, allowing excellent control of hemostasis and vaporization or cutting on endometrial and myometrial tissue. With a penetration that does not exceed 3 mm thus giving great safety for its use in the office environment (10).

Advantages: less pain, less expensive if the fiber is reusable, and more versatile for office use, excellent hemostasis, good for vaporizing, there is evidence of lower recurrence rate, few bubbles, always works with the same power, fiber Slim

optics that allow a greater flow of liquid, improving the visual.

Disadvantages: it is not available in most centers, there is little training among gynecologists and it does not ensure the extraction of samples from the endometrial cavity.

5- Mini-rectoscopes: they use energy for the resection. Both monopolar and bipolar.

Advantages: Excellent for the office setting, allows hemostasis and to perform clean cuts, allows removal of resected tissue by destroying the lesion into small fragments or "chips". Complete extraction has been described in 96.15% of the cases with excellent patient tolerance for the procedure and great patient's satisfaction (8).

Disadvantages: Produces a large amount of bubbles, can cause electrical damage, requires instrument change, requires special irrigation-aspiration system, requires special generator capable of producing plasma energy and cost (9).

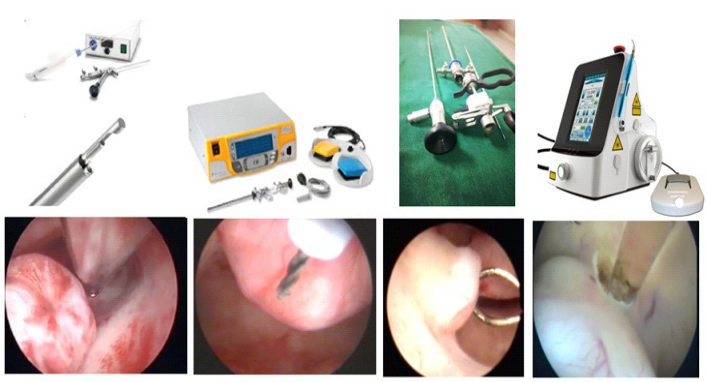


Fig. 3: Instruments used for hysteroscopic polypectomy

6- Resection with tissue retrieval systems

They allow the destruction of the tissue through rotating blades integrated into a flow system of the distension medium with which the destroyed tissue can be recovered in a clean and organized way. Recovery of tissue in hysteroscopy has always been one of the greatest difficulties, especially for novice operators. This difficulty is overcome with training and the appropriate instruments.

Its efficiency will depend on the system used, the size of the window, the revolutions per minute, the vacuum pressures of each equipment and the expertise of the operator. Another benefit is that some of them are reusable. There is high success rate even in resecting polyps bigger than 2 cm (96.92% vs. 97.53% in less than 2cm) without complications and excellent patient tolerance in the office setting (11).

Disadvantages: It is more expensive (cost of disposables (blades, tubes), their performance decreases as the blades wear out, not available in most centers, does not provide hemostasis (except for models that have associated bipolar energy cutting It requires an instrument change and its diameters are still too large for the office environment (6-7 mm).

DISCUSION

Hysteroscopy is the most efficient method for the diagnosis of endometrial polyps, better than transvaginal ultrasound and hysterosonography. Additionally, it allows to see and treat the findings in one setting (12). The predictive value of the most used diagnostic method; Transvaginal ultrasound is far from accurate, since out of 100 polyps reported in ultrasound, 20 to 40% may be false positives, forcing physicians and patients to undertake additional studies for their confirmation.

An RCT comparing hysteroscopic treatment of endometrial polyps in the office setting compared with management in the operating room, did not show significant differences in terms of symptom relief; 73% in the office and 80% in the operating room, concluding that ambulatory in office polypectomy was not inferior to polypectomy performed in the operating room, to treat abnormal uterine bleeding, proving to be a safe, feasible and cost effective procedure, however, they warn that patients should know that, the polyp is more likely not to be removed with the outpatient procedure and the acceptability of the procedure may be lower (3,13). The recurrence rate is low; (0% to 15%) after a polypectomy, regardless of the method used (14).

Ambulatory polypectomy was associated with a minimal, but significantly higher risk of residual endometrial polyps compared to hospital polypectomy. In contrast, hospital polypectomy was associated with a considerably higher risk of complications such as uterine perforation compared with office hysteroscopy. Due to the lower intraoperative risks and the higher cost effectiveness, office hysteroscopy can be considered, whenever feasible, as the gold standard technique for the diagnosis and treatment of EP (15).

In-office removal of endometrial polyps using mechanical instruments, a bipolar electrode, or a hysteroscopic morcellator provides adequate tissue for histologic diagnosis, and there is no difference between these three techniques for evaluation of the pathologic specimen, despite the effects of the device used on the specimen producing thermal or tissue fragmentation (16).

AlHilli and Collaborators (17) found that intrauterine morcellation may be associated with a lower recurrence of endometrial polyps. However, the incidence of recurrent abnormal uterine bleeding is independent of the polypectomy method. In a systematic review, they found that morcellation is associated with a higher surgical success rate and a shorter surgical time than resectoscopy and that the versapoint® (15,16).

In general, all studies (18–21) show that Morcellation has the following advantages

- More effective in achieving a complete polypectomy Significant decrease in total operative time
- Shorter learning curve
- Shorter procedure length
- Less painful
- More acceptable by the patient

Disadvantages include the requirement for a specific hysteroscope for the morcellator, the need for a specific infusion system and an infusion pump, and the diameter of the morcellator. (22)

Diode laser polypectomy produced fewer polyp recurrence (2.2% vs 32.6%; P = 0.001) and a higher satisfaction rate with the procedure compared to versapoint® at 3 months, with no differences in success, tolerance, surgical time or complications. (21)

The risk factors found for the recurrence of endometrial polyps are the duration of follow-up, the presence of abnormal uterine bleeding, and polyp size greater than 15cmm. (14) Other studies show endometriosis as a risk factor that increases the incidence and recurrence of polyps at 2 years by 23.08%, and at 5 years by 56.41%, however the type of polypectomy has not been related as a risk factor for recurrence in patients with endometriosis (23).

Regarding fertility, it is not known which is the best method for treatment, since no superiority has been demonstrated with any of the methods. (24,25)

Finally, the cost-effective analysis, although they are specific to each institution, has shown that the total cost of hysteroscopic polypectomy is higher when disposable equipment is used compared to reusable equipment, both in the operating room and in the office setting. Surgery with reusable loop electrode resection is the most cost-effective approach in any setting, but requires experienced surgeon (26)

CONCLUSIONS

Office hysteroscopy, in the gold standard approach for the diagnosis and treatment of patients with EP. As a diagnostic test, it has a better performance in sensitivity and specificity compared to other diagnostic modalities, and it has the possibility of providing immediate and effective treatment (“see and treat” philosophy) in the same procedure, avoiding the dilemma of follow-up. It requires investment in technology and training and has a growing volume of evidence on its cost-benefit and cost-effectiveness for the patient and for health systems. Gynecologists are invited to abandon blind curettage for both diagnosis and treatment of patients with suspected endometrial polyps and in general of all pathology of the endometrial cavity, preferring office hysteroscopy over hysterosonography or hysteroscopy operating room, since they give confirmation of the pathology, characteristics of the polyps and are therapeutic the vast majority of the time.

REFERENCES

1- Munro, M. G. and G. Southern California Permanente Medical Group's Abnormal Uterine Bleeding Working (2014). "Investigation of women with postmenopausal uterine bleeding: clinical practice recommendations." Perm J **18**(1): 55-70. **2-** Bettocchi, S., et al. (2001). "Diagnostic inadequacy of dilatation and curettage." Fertil Steril **75**(4): 803-805. **3-** Clark, T. J., et al. (2015). "A randomised controlled trial of Outpatient versus inpatient Polyp Treatment (OPT) for abnormal uterine bleeding." Health Technol Assess **19**(61): 1-194. **4-** Salazar, C. A. and K. B. Isaacson (2018). "Office Operative Hysteroscopy: An Update." J Minim Invasive Gynecol **25**(2): 199-208. **5-** Diwakar, L., et al. (2016). "An economic evaluation of outpatient versus inpatient polyp treatment for abnormal uterine bleeding." BJOG **123**(4): 625-631. **6-** Operative hysteroscopy https://elearning.rcog.org.uk/uterine-cavity-surgery/operative-hysteroscopy **7-** Bettocchi, S., et al. (2004). "Operative office hysteroscopy without anesthesia: analysis of 4863 cases performed with mechanical instruments." J Am Assoc Gynecol Laparosc **11**(1): 59-61. **8-** Dealberti, D., et al. (2016). "Feasibility and Acceptability of Office-Based Polypectomy With a 16F Mini-Resectoscope: A Multicenter Clinical Study." J Minim Invasive Gynecol **23**(3): 418-424. **9-** Rovira Pampalona, J., et al. (2015). "Outpatient Hysteroscopic Polypectomy: Bipolar Energy System (Versapoint(R)) versus Mechanical Energy System (TRUCLEAR System(R)) - Preliminary Results." Gynecol Obstet Invest **80**(1): 3-9. **10-** Nappi, L., et al. (2016). "The use of laser in hysteroscopic surgery." Minerva Ginecol **68**(6): 722-726. **11-** Ceci, O., et al. (2019). "Office treatment of large endometrial polyps using truclear 5C: Feasibility and acceptability." J Obstet Gynaecol Res **45**(3): 626-633. **12-** Grimbizis, G. F., et al. (2010). "A prospective comparison of transvaginal ultrasound, saline infusion sonohysterography, and diagnostic hysteroscopy in the evaluation of endometrial pathology." Fertil Steril **94**(7): 2720-2725. **13-** Cooper, N. A., et al. (2015). "Outpatient versus inpatient uterine polyp treatment for abnormal uterine bleeding: randomised controlled non-inferiority study." BMJ **350**: h1398. View more

Hysteroscopic polipectomy in Operating Room (OR)

Dr Sushma Deshmukh, Director of Central India Test Tube Baby Centre. Nagpur. India

INTRODUCTION

Polyp is one of the most common endometrial abnormalities present in 9-25% in the general population and most frequent causes of abnormal uterine bleeding (AUB). In the management of polyps the literature mentioned expectant as well as surgical management. Hysteroscopy is highly reliable and sensitive tool to diagnose and treat the polyps. Polyp can be removed by hysteroscopy using hysteroscopic scissors, grasping forceps, monopolar or bipolar, resectoscopes, lasers or hysteroscopic mechanical tissue removal devices.

The hysteroscopic polypectomy performed in the outpatient setting, without anesthesia, is a procedure well-tolerated by patients and displays a high level of efficacy, similar to that found in the procedure performed under anaesthesia in the operating room. Polypectomy in OR (Operating Room) is required if polyp is big, with broad base.

WHY WE NEED OR FOR POLIPECTOMY?

- Large, broad base polyps need resectoscope and OR for their removal.
- Sometimes for multiple and recurrence, resectoscope is better option.
- D.Andia Ortiz(1) mentioned active approach in which polyp resection is done in operating room with the help of resectoscope. It is more favoured because it will treat AUB. Secondly polyp may present a malignant transformation at its base or tip which may be missed if not resected completely.
- In many developing countries sometimes it is very difficult to educate and prepare the patient for office hysteroscopy. Many patients demand anaesthesia.

SELECTION OF PATIENTS

We have to counsel the patients who require operative room with anaesthesia for polypectopmy. It is also important to consider type, size of pathology, depth of penetration of the lesion, skill and expertise of the hysteroscopist.

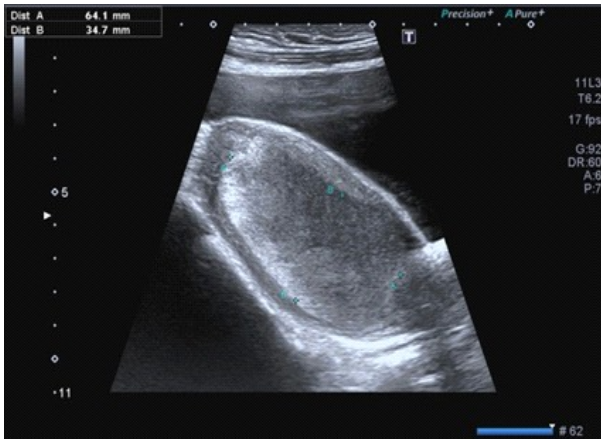


Fig.1 Abdominal sonography

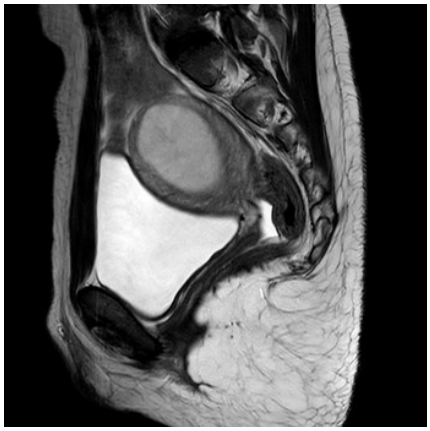


Fig.2 MRI pelvis

- All patients of AUB and PMB (Postmenopausal Bleeding) with larger or more widely spread polyps
- Bigger polyps with possibility of malignancy.
- Large or/and multiple polyps in patients treated with long standing tamoxiphen,letrozole ,tibolone.
- Patient not willing for office procedure, virgin girls & ladies(especially religious community of women).
- Patients with polyp and are posted for laparoscopy for another reason.
- Patients with severe cervical stenosis with low pain threshold or vaginismus.
- Patients with any combinations of above.

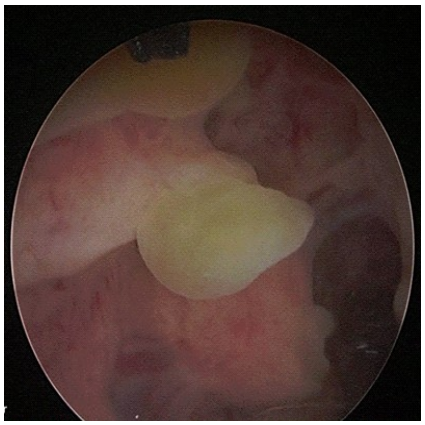


Fig.3 Polypoid matter at ant-lat wall

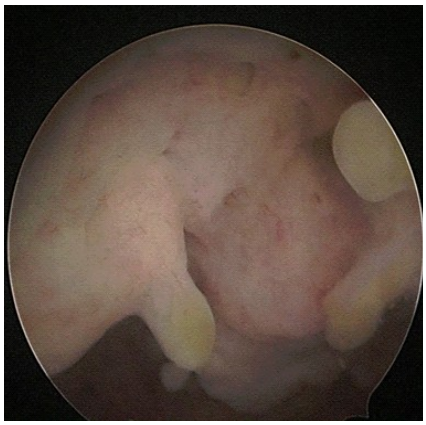


Fig 4 Anterior wall polyps

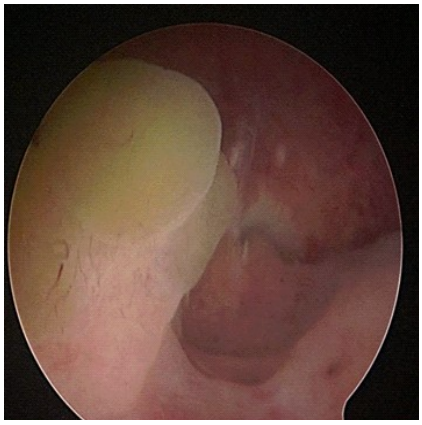


Fig.5 Posterior wall

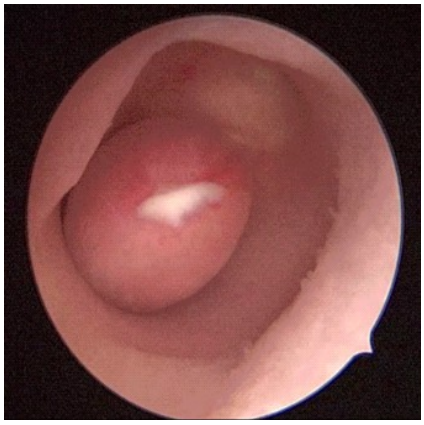


Fig.6 Polyp at rt.lat. wall

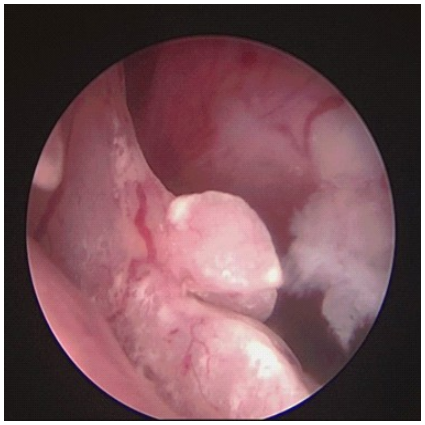


Fig. 7 Multiple polyps

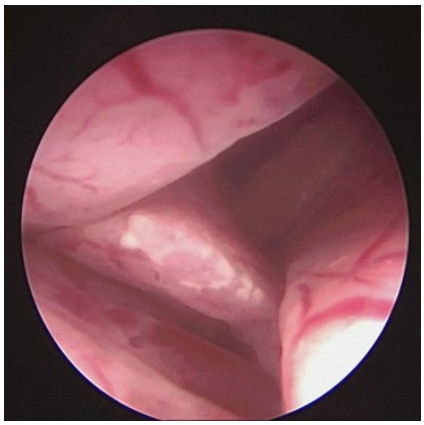


Fig.8 Polypoid Endometrium

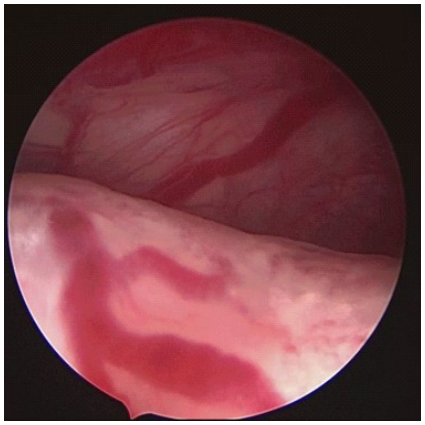


Fig.9- Large post polyp

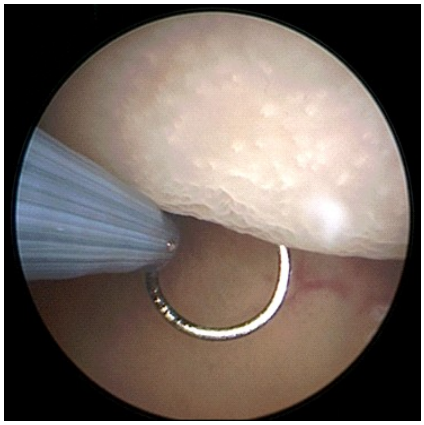


Fig.10, Gubbini's resectoscope
(Courtesy Dr. Gubbini)

SURGICAL PLANNING

In premenopausal patients the timing for hysteroscopy is during the follicular phase of menstrual cycle after menstruation. There is insufficient evidence to recommend routine cervical ripening before diagnostic or operative hysteroscopy, but it may be considered for those patients at higher risk of cervical stenosis or increased pain with the surgical procedure (2).

Sometimes in young adolescent girls we need hysteroscopy .This is the story of young girl of 13yrs who attained menarche as a nightmare with severe menorrhagia from first day of menstrual cycle lasted for one month, not responding to any nonhormonal as well as hormonal treatment. USG, MRI suggested a big intrauterine polyp (Fig.1) (Fig 2). So she was posted for hysteroscopy under anaesthesia. The whole cavity as studded with

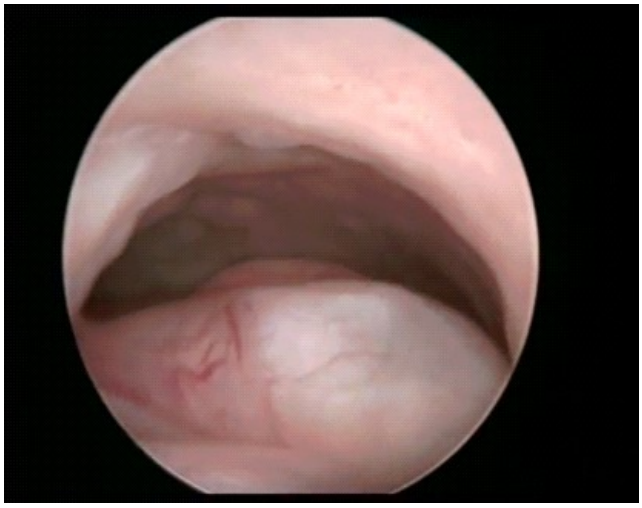


Fig. 11 Polyp filling uterine cavity

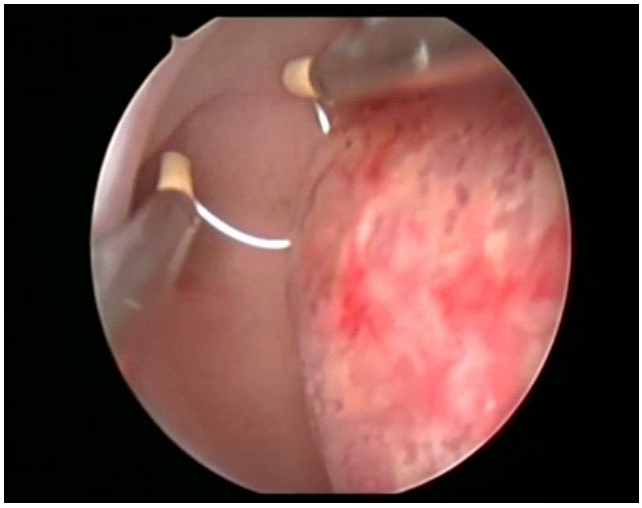


Fig. 12-Resection by resectoscope

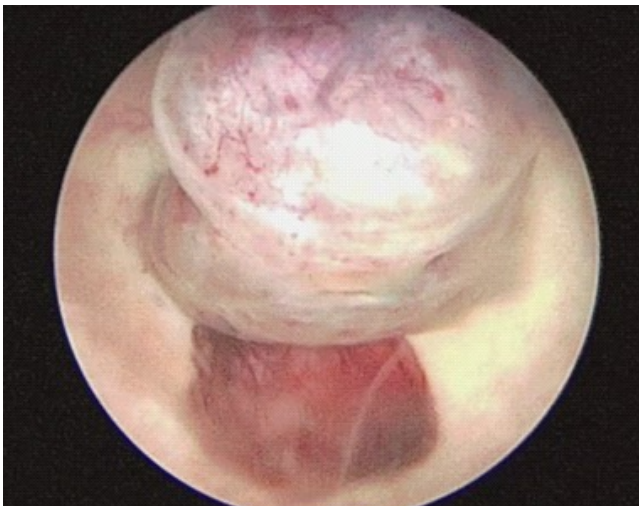


Fig 13Malignant polyp in a 76yrs old lady -Vaginoscopic view

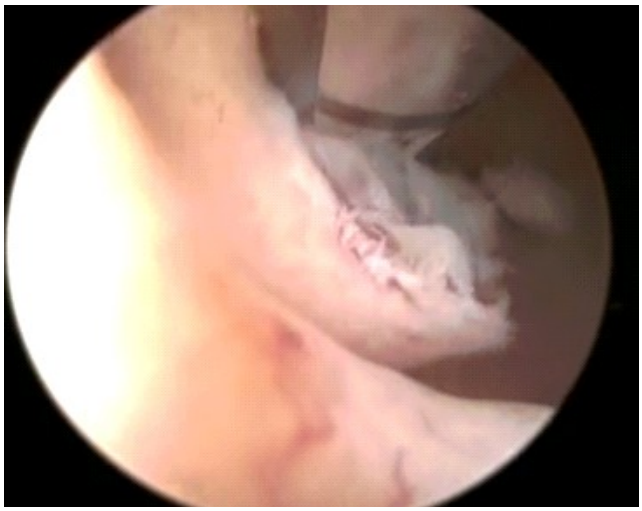


Fig.14 Morcellation of Polyp (courtesy Dr Milind Telang)

1- Small diameter hysteroscopes with operative sheaths for polypectomy without cervical dilatation- We can use Bettocchi's 2.9mm, 30 telescope with normal saline as distension medium. We can use scissors, forceps or bipolar current to cut the pedicle.

multiple polyps (Fig.3,4,5). Polyps removed with scissors. Another young lady of 35 yrs married 10 yrs back with primary infertility reported with severe AUB. She was having severe vaginismus. She didn't allow examination also. The couple couldn't consummate since marriage. She was having big

polyp which was resected with scissors in OR(Fig.6)

Women using tamoxifen are at specific risk for the development of endometrial polyps, polypoid endometrium or hyperaemic endometrium. They may present with AUB with multiple ploypss. (Fig 7,8,9) Such patient may require resectoscope.

2- Resectoscope. It is well accepted option for very big polyps or broad base polyps.(nowadays resectoscope are coming in various small sizes from 16 French to 27) . Gubbini's 16 Freench 0^0 is very good alternative and will require minimal or no dilatation.(Fig.10). In resectoscopy, polyp removed with slice technique(Fig.11.12)

Some patients of postmenopausal bleeding with endometrial carcinoma can present with polyp(Fig.13). Many publications described the relationship of polyp with endometrial carcinoma. And sometimes false negative reports can occur if carcinoma at the base of the polyp is not detected. Karakaya et al. reported a prevalence of endometrial cancer among 9% of geriatric women with endometrial polyps.

3- Hysteroscopic mechanical tissue removal devices. It is a very good option for patients with very big polyp. It will reduce the complications like fluid overload as the procedure time is very less (Fig.,14)

For hysteroscopic surgery in OR routinely we have to consider management of distension media, optimum light source for proper visualization and electrical current. Nowadays most of the centres are using bipolar with normal saline.

ADVANTAGES AND DISADVANTAGES

Office hysteroscopy was associated with a higher risk of failed or incomplete polyp removal. On the other hand inpatient hysteroscopy polypectomy was associated with greater risk of complications which may be because of difficult polyps, anaesthesia, perforations, fluid overload. In patients with co-morbidities like cardiopulmonary disease, polypectomy is better in OR under anaesthesia care team. Also in patients with previous failed or nontolerated office procedure, OR is better choice.

CONCLUSION

Resection of polyps in OR with resectoscope to be safe. As compared with mechanical resection, resectoscopic surgery operative time is much longer. Ultimately both techniques result in symptom resolution and low recurrence rate.

REFERENCES

1- Outcomes of endometrial-polyp treatment with hysteroscopy in operating room; 01 September 2007: , , , , & ;Gynecological Surgery volume 5, pages35–39(2008) 2- Committee on Gynecologic Practice, *Number 13, September 2018* AAGL Practice Guidelines Committee in collaboration with the ACOG; Linda C. Yang, MD, MSc and AAGL member Angela Chaudhari, MD 3- J Minim Invasive Gynecol. Nov-Dec 2017;24(7): /j.jmig.2017.08.645. Epub 2017 Aug 24.Resectoscopic Surgery for Polyps and Myomas: A Review of the Literature , Kirsten J Sasaki , Aarathi Cholkeri-Singh

Polyps in postmenopausal women

Dr Thiago Guazzelli, Hospital MMEVN Cachoeirinha, São Paulo, Brasil

INTRODUCTION

Endometrial polyps are one of the most common etiologies of abnormal genital bleeding in both premenopausal and postmenopausal women [1-3]. They may also be asymptomatic. The great majority of endometrial polyps are benign, but malignancy occurs in some women [2].
In postmenopausal women with abnormal uterine bleeding, biopsy by curettage may be not reliable for evaluation of endometrial pathology, specially in focal growth pattern [4].

SIZE MATTERS

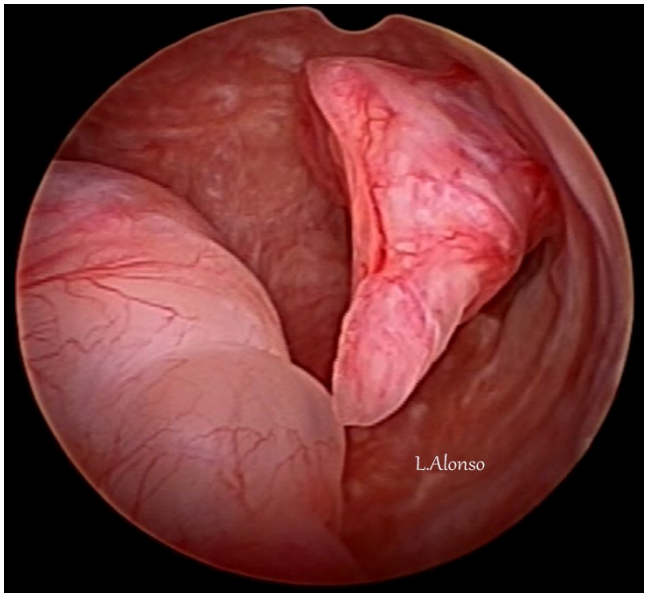
The systematic review found that data were inconsistent regarding whether increased polyp size was associated with malignancy [7]. Studies including more than 400 women supporting this association have reported that premalignant or malignant histology was associated with polyps greater than 1.5 cm in diameter [9].

Multiple polyps and prolapsed polyps are unlikely to regress and are likely to become symptomatic, in our clinical experience. In adition, prolapsed polyps are easily removed in an outpatient setting [8].

WHO WE SHOULD AIM

Approximately 95 percent of endometrial polyps are benign [7]. A systematic review of 17 observational studies including over 10,000 women reported that the incidence of polyps that were malignant or hyperplastic was significantly higher in postmenopausal compared with premenopausal women (5.4 versus 1.7 percent) and those with bleeding compared with those without bleeding (4.2 versus 2.2 percent) [2]. Of note, these characteristics are also associated with an increased risk of endometrial malignancy also in patients without polyps.[8]

Baiochi et al demonstrated that older menopausal bleeding patients with hypertension are at higher risk for premalignant and malignant polyps. When clinical variables were considered, patient age, menopause status, presence of abnormal uterine bleeding, and hypertension were statistically significant characteristics related to premalignant and malignant features.



In addition to the previously mentioned factors, Gregoriou et al included obesity and diabetes as risk factors for endometrial polyp malignancy in a study including 516 cases.

HORMONE THERAPY

Oguz et al evaluated the iatrogenic effect of different protocols of hormone therapy (HT) on endometrial polyp formation adjusting for the

	group 1	group 2	group 3
	0.625 mg conjugated estrogen + 2.5 mg medroxyprogestorone	2 mg estradiol + 1 mg norethisterone	2.5 mg tibolone
polyps	5	10	2
recorrence of polyps	1	3	

	significant differences	polyps	significant differences	Recorrence of polyps
group 1 X group 2	x	P < 0.05		P > 0.05
group 2 x group 3	X	P < 0.05		P > 0.05
group 1 X group 3		P > 0.05		P > 0.05

confounding effects of other factors such as age, parity, body weight and menopausal status. After the first 18 months, patients had their first office hysteroscopy and it was serially repeated every 6 months for a period of 3 years aiming to investigate the prevalence of new and recurrent endometrial polyps.

They observed that endometrial polyp formation may be dependent on the type and dosage of the estrogen and progestogen used. Especially a progestogen with high antiestrogenic activity may play an important preventive role in the development of endometrial polyps.

Maia et al showed HT may cause endometrial polyp involution by decreasing proliferation and stimulating apoptosis and the use of progestins as the ideal endometrial protection should therefore be reconsidered. [13,14]

TAMOXIFEN

The diagnosis of polyp was made in 2 to 36 percent of postmenopausal women treated with . Polyps in these women may be large (>2 cm), multiple, or show molecular alterations. Data from a large randomized trial of breast cancer chemoprophylaxis in postmenopausal women found that the incidence of polyps was higher in women treated with tamoxifen compared with (2.1 versus 0.6 percent, relative risk 0.30, 95% CI 0.25-0.35) [8, 11,12].

SURGERY FOR EVERYONE?

For postmenopausal women, we recommend removal of all endometrial polyps. The risk of complications associated with polypectomy is low and the risk of malignancy in a polyp is highest in those women, specially in those who present with bleeding [8,9].

REFERENCES

1- Lieng, M., et al. (2010). "Treatment of endometrial polyps: a systematic review." Acta Obstet Gynecol Scand**89**(8): 992-1002. **2-**Lee, S. C., et al. (2010). "The oncogenic potential of endometrial polyps: a systematic review and meta-analysis." Obstet Gynecol**116**(5): 1197-1205. **3 -** GL, Nucci, MR, Robboy SJ. Endometritis, metaplasias, polyps, and miscellaneous changes. In: Robboy's Pathology of the Female Reproductie Tract, 2nd ed., Robboy SJ, Mutter GL, Prat J, et al (Eds), Churchill Livingston Elsevier, Oxford 2009. p.343. **4-**Brooks, P. G. and S. P. Serden (1988). "Hysteroscopic findings after unsuccessful dilatation and curettage for abnormal uterine bleeding." Am J Obstet Gynecol**158**(6 Pt 1): 1354-1357. **5-**Oguz, S., et al. (2005). "The role of hormone replacement therapy in endometrial polyp formation." Maturitas**50**(3): 231-236. **6-** Salim, S., et al. (2011). "Diagnosis and management of endometrial polyps: a critical review of the literature." J Minim Invasive Gynecol**18**(5): 569-581. **7-**Baiocchi, G., et al. (2009). "Malignancy in endometrial polyps: a 12-year experience." Am J Obstet Gynecol**201**(5): 462 e461-464. **8 –**Stewart EA, et al. Endometrial polyps. Literature review current through: Jan 2021. | This topic last updated: Feb 05, 2021. Uptodate. **9 -** -Arie A, et al .The malignant potential of endometrial polyps.
Eur J Obstet Gynecol Reprod Biol. 2004;115(2):206. **10-**, O., et al. (2009). "Clinical parameters linked with malignancy in endometrial polyps." Climacteric**12**(5): 454-458. **11-**Cohen, I. (2004). "Endometrial pathologies associated with postmenopausal tamoxifen treatment." Gynecol Oncol**94**(2): 256-266. **12-**Runowicz, C. D., et al. (2011). "Gynecologic conditions in participants in the NSABP breast cancer prevention study of tamoxifen and raloxifene (STAR)." Am J Obstet Gynecol**205**(6): 535 e531-535.

Polyps of uncommon location. Vaginal, cervical and fallopian tube.

Emma Marquez MD, Carugno Jose MD

University of Miami. Minimally Invasive Gynecology Division. University of Miami. Miller School of Medicine.

INTRODUCTION

Endometrial polyps are a very common cause of abnormal uterine bleeding in both premenopausal and postmenopausal women. Polyps of the female genital tract are most commonly located inside the uterine cavity and are generally benign. However, polyps can also be found in the vagina, the cervix, and fallopian tubes, although polyps in the tubes and vagina appear to be rare occurrences. Most often, these polyps can be diagnosed and removed via hysteroscopy and sent for pathological evaluation if indicated.

EMBRYOLOGY

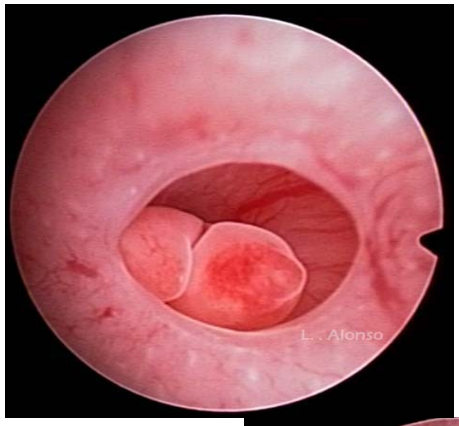
The female reproductive system is derived from mesoderm, primordial germ cells, coelomic epithelium, and mesenchyme (Moncada-Madrazo, 2020). The uterus forms during Mullerian organogenesis, and is accompanied by the development of the upper third of the vagina, the cervix, and both fallopian tubes. Given their embryologic origin, it follows that polyps that develop in the uterus, cervix and fallopian tubes should be structurally similar.

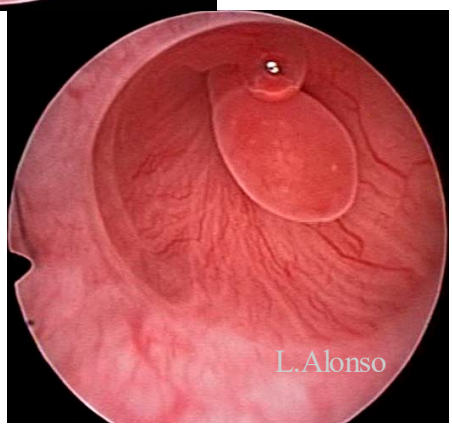
FALLOPIAN TUBAL POLYPS

Fallopian tube polyps are benign proliferations of endometrial tissue which have a small stalk connecting them to the mucosal layer of the fallopian tube (Heatley, 2001, Chung, 1990). Fallopian tube polyps are extremely rare, and very little is known about their clinical significance and their impact, if any, during fertility.

Most often, tubal polyps are diagnosed with hysterosalpingography or hysteroscopy as part of an evaluation of the patients with infertility (Wansaicheong, 1998). In the late 90's, two reviews reported the prevalence of fallopian tube polyps to be between 3.8 -11.3% of women undergoing hysterosalpingography for infertility (Wansaicheong, 1998, Lee, 1997). Removal of these polyps can be easily accomplished via hysteroscopy (Stangel, 1981, Guo, 2018).

One case report of a woman with a polyp within the interstitial portion of the fallopian tube was found to have a complete blockage of the tube on hysterosalpingography (Guo, 2018). The polyp was subsequently removed with hysteroscopy and the patient was able to spontaneously conceive one year later. In addition, in one small case series of women with subfertility, the presence of oligo-ovulation and anovulation was shown to be more prevalent in women with large tubal polyps, which the authors defined as greater than 5mm in diameter (Alasiri, 2012).





As an interesting note, endometriosis was associated with fallopian tube polyps both larger and smaller than 5mm. Alasiri et al hypothesized that the coexistence of anovulation and endometriosis may lead to cornual polyp formation as both conditions are associated with proliferation of endometrium (Alasiri, 2012). This theory is plausible given that other authors have found tubal polyps to be of endometrial origin (Chung, 1990).

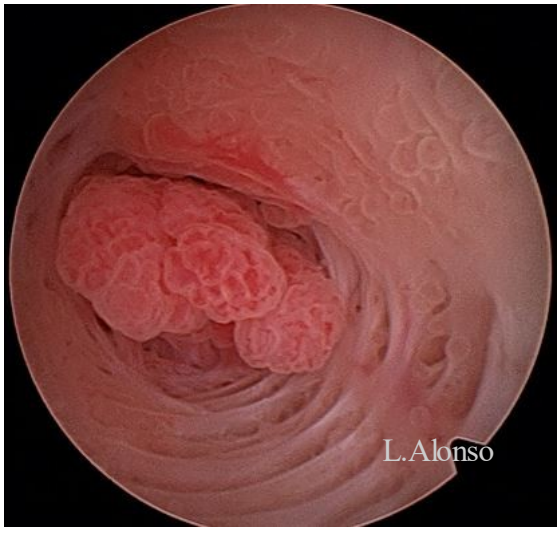
Though rare, fallopian tube polyps may be visualized on hysteroscopy and should the patient wish to achieve pregnancy, removal of the polyp may improve fertility.

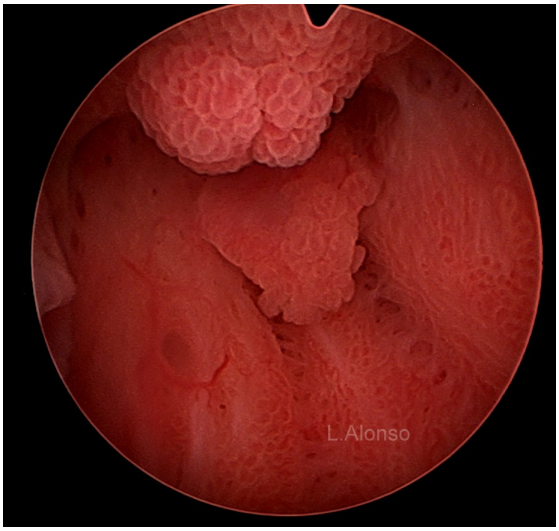
CERVICAL POLYPS

Cervical polyps are papillary proliferations of epithelial tissue around a fibrovascular stromal core which may have glandular or squamous epithelium (Levy, 2016). They are commonly pedunculated, measuring between 2–30 mm and may arise from anywhere in the cervical canal (Stamatellos, 2007). The etiology of cervical polyps is not well understood, but it is thought that they arise from focal hyperplasia associated with chronic inflammation, an abnormal local response to increased levels of estrogen, or local congestion of cervical blood vessels (Berzolla, 2007).

Cervical polyps are mostly asymptomatic, however, they may also cause intermenstrual, post-coital or postmenopausal bleeding (usually minimal spotting) or increased vaginal discharge (Tilapur, 2010, Stamatellos, 2007).

Cervical polyps may be detected by routine gynecological examination, colposcopy, filling defects on hysterosalpingogram, ultrasound or endometrial biopsy (Stamatellos, 2007).





Cervical polyps are benign proliferation of tissue extremely unlikely to be malignant. One study evaluating 22,246 cervical polyps found that only 0.1% of polyps were malignant, 0.5% of polyps exhibited dysplasia, and reactive atypia was seen in only 1.6% (Berzolla, 2007). However, benign inflammatory changes were seen in up to 27.7% of cervical polyps, metaplasia was present in 13.6% of the polyps, and microglandular hyperplasia in 6.8% (Berzolla, 2007). Other studies have reported higher rates of dysplastic (2.2%) and atypical/malignant findings (1.6%) in cervical polyps (Levy, 2016). There may also be some difference in malignancy rate between asymptomatic and symptomatic polyps, with symptomatic polyps being more likely to be malignant (Golan, 1994).

Moreover, as opposed to endometrial polyps, rates of dysplasia and atypia have been found to be higher in premenopausal than in postmenopausal women in multiple studies (Levy, 2016, Schnatz, 2009). It is thought that younger women have a higher likelihood of vaginitis, cervicitis, sexually transmitted diseases, and inflammatory changes from the human papilloma virus (HPV), resulting in higher prevalence of reactive atypia and metaplasia (Schnatz, 2009).

The location, number, and size of cervical polyps are best determined with diagnostic hysteroscopy (Stamatellos, 2007). Interestingly, one study of hysteroscopic evaluation of cervical polyps found that almost 17% of initially diagnosed cervical polyps were instead coming from the endometrial cavity (Spiewankiewicz, 2003). Hysteroscopy is warranted in post-menopausal patients with post-menopausal bleeding in the presence of cervical polyps.

Endometrial evaluation with hysteroscopy is also warranted given that many patients with cervical polyps will also have coexisting endometrial polyps (Coeman, 1993). This study of 3046 diagnostic hysteroscopies found that the likelihood of endometrial polyps in the presence of cervical polyps increases with age. Overall, 26.7% of women with cervical polyps will also have endometrial polyps, but only 10% of women under the age of 29 had endometrial polyps, while almost 86% of women over the age of 70 had concomitant endometrial polyps.

Cervical polyps may be removed in the office via twisting or avulsion (Stamatellos, 2007). However, these methods often leave residual polyp fragments in the cervical canal, and they may be associated with a higher rate of polyp recurrence (over all recurrence rate 6.2-12.6%. Berzolla, 2007, Tirlapur, 2010). Conversely, hysteroscopy allows not only a precise visualization of the polyp pedicle for removal, but allows the hysteroscopist will be able to identify and treat concurrent asymptomatic intrauterine pathological conditions.

VAGINAL POLYPS

Vaginal polyps, like those found in the fallopian tubes, are rare with few reports in the literature. One review paper found only 75 reported cases of vaginal polyps (Song, 2012).

Vaginal polyps appear to be hormonally response, as they are usually found in pregnant women or women taking hormone-based therapies including progesterone (Song, 2012). On histopathology, they often express estrogen or progesterone receptors (Song, 2012). In addition, one case report of a pregnant woman with large vaginal polyps reported spontaneous regression in size during the postpartum period, leading the authors to conclude that they were hormone mediated (Samal, 2015).

These vaginal polyps are likely representing a hyperplastic processes rather a neoplastic one (Heller, 2017). Vaginal polyps often exhibit stromal hypercellularity, cytological atypia, and increased mitoses, which may cause them to be misdiagnosed as a sarcoma (Song, 2012).

However, authors stress the benign nature of these polyps. Vaginal polyps can treated with simple excision since their recurrences are rare (Heller, 2017).

CONCLUSION AND FUTURE DIRECTIONS

Most polyps that arise in the female genital tract can be both diagnosed and removed via hysteroscopy. Further, additional treatments are often needed in the case of endometrial sampling with cervical polyps or removal of polyps in the fallopian tubes to increase likelihood of fertility, making the hysteroscopist essential in the treatment of these polyps.

In addition, while these polyps are unlikely to be malignant, hysteroscopy may allow for the early diagnosis of endometrial hyperplasia or malignancy of the fallopian tubes. Indeed, some authors have suggested sampling of the fallopian tubes as a means of early detection of ovarian cancer (Gizzo, 2017). More research is needed to determine the utility of hysteroscopy for the early detection of ovarian and fallopian tubes cancers.

REFERENCES

1- Gizzo, S., et al. (2017). "A novel hysteroscopic approach for ovarian cancer screening/early diagnosis." Oncol Lett**13**(2): 549-553. **2.** Moncada-Madrazo M, Rodríguez Valero C. Embryology, uterus. StatPearls Web site.https://www.ncbi.nlm.nih.gov/books/NBK547748/. Updated 2020. Accessed February 25, 2021. 3- Samal, S. K., et al. (2015). "Fibroepithelial Polyps of the Vagina in Pregnancy." J Clin Diagn Res **9**(10): QJ01-02. **4-** Heller, A., et al. (2017). "Pseudosarcomatous Vaginal Polyp." Int J Surg Pathol **25**(1): 54-55. **5-** Song, J. S., et al. (2012). "Cellular pseudosarcomatous fibroepithelial stromal polyp of the vagina during pregnancy: a lesion that is overdiagnosed as a malignant tumor." Korean J Pathol **46**(5): 494-498. **6.** Tinelli, Andrea., Alonso Pacheco, Luis.,Haimovich, Sergio.,. Atlas of hysteroscopy.Updated 2020. **7-** Schnatz, P. F., et al. (2009). "Cervical polyps in postmenopausal women: is there a difference in risk?" Menopause **16**(3): 524-528. **8-** Spiewankiewicz, B., et al. (2003). "Hysteroscopy in cases of cervical polyps." Eur J Gynaecol Oncol **24**(1): 67-69. **9-** Coeman, D., et al. (1993). "Hysteroscopic findings in patients with a cervical polyp." Am J Obstet Gynecol **169**(6): 1563-1565. **10-** Golan, A., et al. (1994). "Cervical polyp: evaluation of current treatment." Gynecol Obstet Invest **37**(1): 56-58. **11-** Berzolla, C. E., et al. (2007). "Dysplasia and malignancy in endocervical polyps." J Womens Health (Larchmt) **16**(9): 1317-1321. **12-** Tirlapur, S. A., et al. (2010). "Clinico-pathological study of cervical polyps." Arch Gynecol Obstet **282**(5): 535-538. **13-** Levy, R. A., et al. (2016). "Cervical polyps: Is histologic evaluation necessary?" Pathol Res Pract **212**(9): 800-803. **14-** Stangel, J. J., et al. (1981). "Microsurgical resection of bilateral fallopian tube polyps." Fertil Steril **35**(5): 580-582. **15-** Chung, C. J., et al. (1990). "Bilateral fallopian tubal polyps: radiologic and pathologic correlation." Urol Radiol **12**(2): 120-122. **16-** Kim, M. R., et al. (2003). "High frequency of endometrial polyps in endometriosis." J Am Assoc Gynecol Laparosc **10**(1): 46-48. **17-** Alasiri, S. A., et al. (2012). "Cornual polyps of the fallopian tube are associated with endometriosis and anovulation." Obstet Gynecol Int **2012**: 561306. **18-** Brubaker, L. M. and R. L. Clark (2005). "Effects of interstitial fallopian tube polyps on isthmic tubal diameter." Fertil Steril **83**(5): 1500-1503. **19-** Heatley, M. K. (2001). "Polyp of the fallopian tube." Pathology **33**(4): 538-539. **20-** Brubaker, L. M. and R. L. Clark (2005). "Effects of interstitial fallopian tube polyps on isthmic tubal diameter." Fertil Steril **83**(5): 1500-1503. **21-** Wansaicheong, G. K. and C. L. Ong (1998). "Intramural tubal polyps--a villain in the shadows?" Singapore Med J **39**(3): 97-100. **22-** Guo, X., et al. (2019). "Interstitial Fallopian Tube Polyp." J Minim Invasive Gynecol **26**(5): 794-795.

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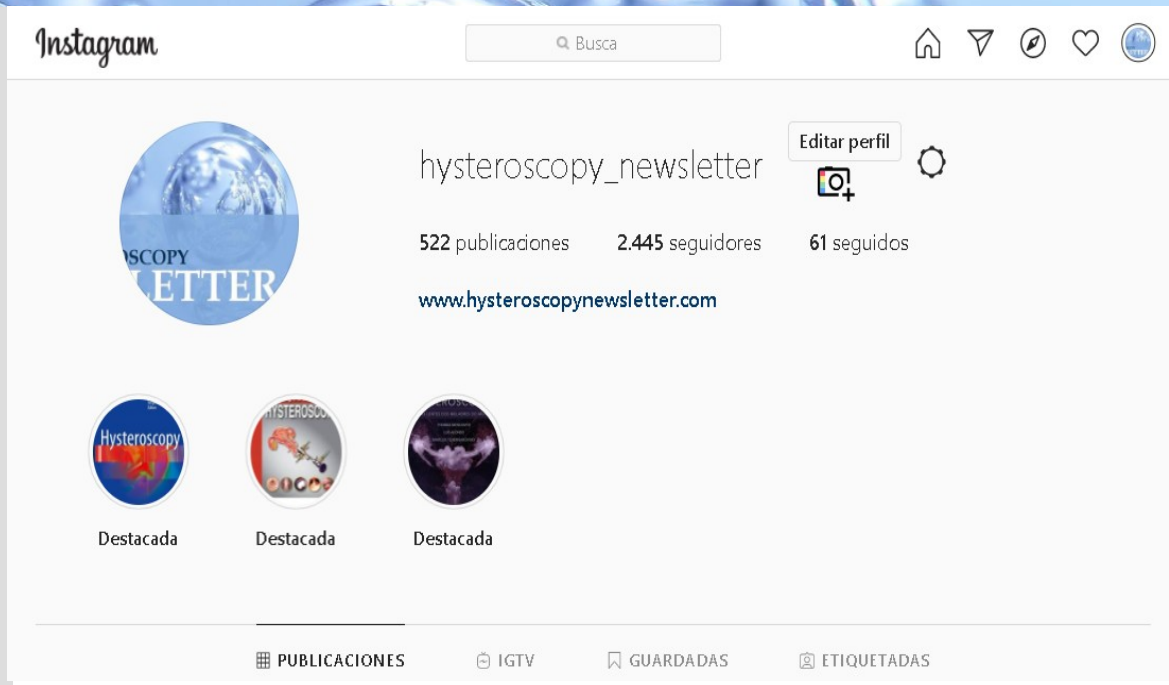

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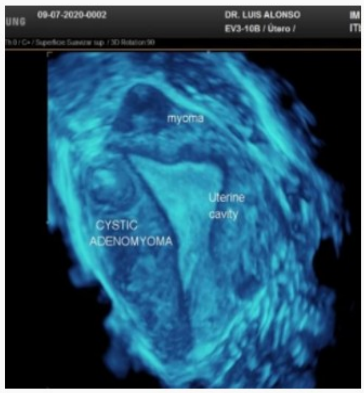

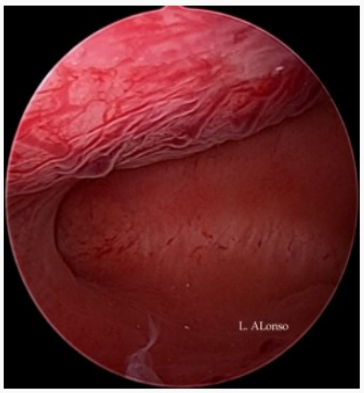

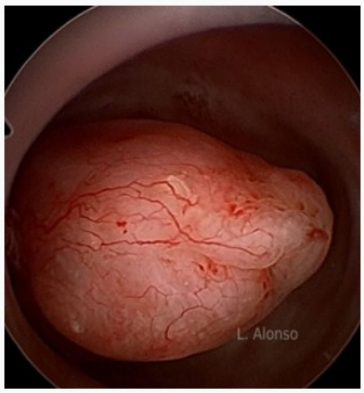

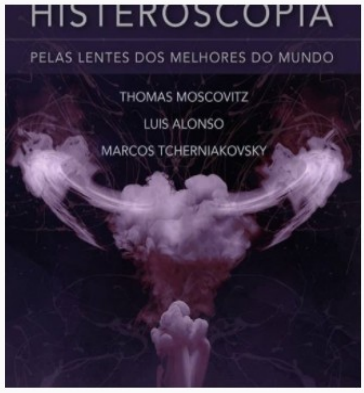

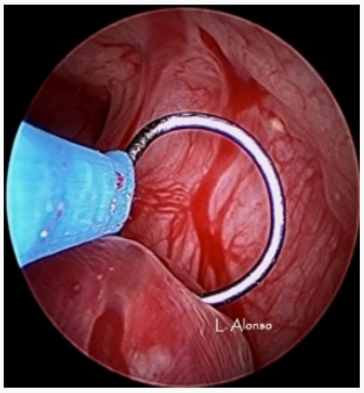

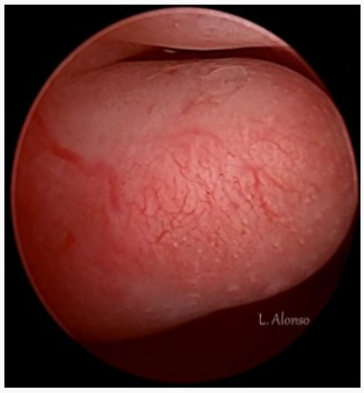

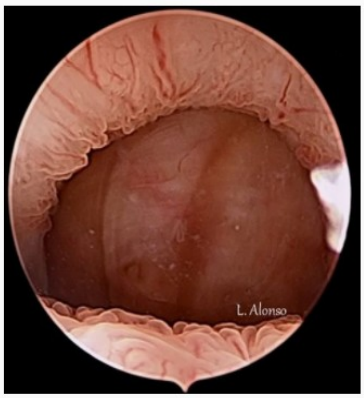

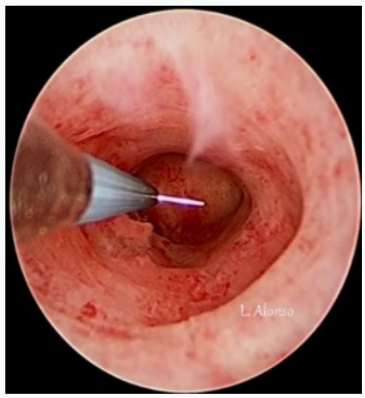

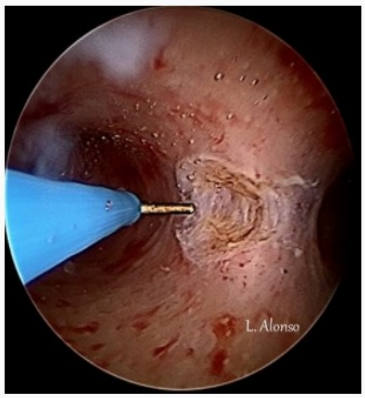

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