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Original Article

Obstetrics and Gynaecology Section

Prevalence of Endometrial Polyp by Office Hysteroscopy at a Tertiary Care Centre in Western Maharashtra: A Prospective Cohort Study

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ABSTRACT

Introduction: Endometrial polyps occur in different reproductive age groups and make it a distinct pathological entity with diverse clinical manifestations.

Aim: To determine the prevalence of endometrial polyp detected by office hysteroscopy, among different cohorts of patients attending the Gynaecology outpatient department at a tertiary care centre in western Maharashtra, India.

Materials and Methods: A prospective cohort study was conducted in women who underwent office hysteroscopy, in view of infertility and Abnormal Uterine Bleeding (AUB) at a tertiary care centre in western Maharashtra, India from November 2020 to October 2021. The study included a total of 227 patients which were divided into four cohorts of women namely, infertility patients (aged 25-35 years) (N=115), AUB patients (aged 40-44 years) (N=29), AUB patients (aged 45-50 years) (N=49) and in postmenopausal women (aged more than 51 years) (N=34). Results were expressed in terms of frequency and percentages.

Results: Endometrial polyp was detected among 45 patients (19.82%) out of a total 227 patients who underwent office hysteroscopy. The prevalence rate was 16 (13.9) among women with infertility, 5 (17.2) among 40-44 years old women with AUB, 15 (30.6) among 45-50 years old women with AUB and 9 (26.5) among postmenopausal women.

Conclusion: Endometrial polyp has a significant prevalence in patients with infertility as well as in patients with AUB. It can be easily detected by diagnostic office hysteroscopy, which should be included in the work-up of such patients.

Keywords: Abnormal uterine bleeding, Female infertility, Postmenopausal women

INTRODUCTION

An endometrial polyp is a hyperplastic growth containing disorganised endometrial glands, stroma, and blood vessels projecting from the basal endometrial lining of the uterus. Depending upon the population studied, the prevalence of endometrial polyp is reported to be between 7.8-34.9% [1]. The reported prevalence of endometrial polyps in primary infertility ranged from 3.8-38.5%, and in secondary infertility from 1.8-17%, with a combined prevalence ranging from 1.9-24%. Endometrial polyp is also an important cause of AUB, accounting for 13-50% in premenopausal women with AUB and 30% in postmenopausal bleeding [2]. Endometrial polyps may be grouped into either sessile or pedunculated and either as single or multiple in numbers. Polyps may be histologically classified as hyperplastic, atrophic, or functional.They may be symptomatic or asymptomatic (small polyps of <1 cm). Other polyps encountered in gynaecology include endocervical polyp and placental polyp. Endocervical polyps are an overgrowth of endocervical stroma covered by the epithelium. They appear as a single, red fleshy mass and are usually benign but may bleed on touch [3]. Placental polyps are retained placental fragments, that undergo necrosis with fibrin deposition. They are at times the cause of frank secondary postpartum haemorrhage [4]. The most common symptom arising out of endometrial polyp is usually AUB. Bleeding from an endometrial polyp takes place due to vascular fragility, chronic inflammation, and surface erosions of the polyps. Ischaemic necrosis may develop over the apex of large pedunculated polyps and may extend to the subsurface capillaries as a result of intermittent torsion and related thrombosis. But, it is seen that the size of the polyp, number of polyps, and the anatomical location of the polyp did not appear to correlate with bleeding symptoms [2]. It has been seen that postmenopausal bleeding with an endometrial polyp or premenopausal women with AUB may harbour foci of atypia or malignancy in 1.5% of endometrial polyps [5].

Hysteroscopic evaluation and polypectomy have been recommended as the optimal mode of treatment for endometrial polyps [2]. With the advent of smaller caliber flexible hysteroscopes, office hysteroscopy is an effective and safe diagnostic, and therapeutic intervention. It is minimally invasive and allows direct visualisation of the intrauterine pathology, without the need for general anaesthesia. Its diagnostic sensitivity and specificity is superior to Saline Infusion Sonography (SIS), Transvaginal Sonography (TVS) or Hysterosalpingography (HSG) [6,7]. Endometrial polyps are an important cause of uterine bleeding, and subfertility, and are possible precursors of malignancy. They are commonly encountered in different group of patients. The present study was carried out using office hysteroscopy, to highlight the prevalence of endometrial polyp among different cohorts of patients with gynaecological problems. The secondary objective was to determine the presence of uterine abnormalities other than polyps, like submucous fibroid, uterine septum etc, in the study group.

MATERIALS AND METHODS

A prospective cohort study was carried out in Armed Forces Medical College, Pune, Maharashtra, India, from November 2020 to October 2021. The study was initiated after the approval of the Institutional Review Board (IRB) (IRB/022/2020). It included 227 consecutive patients who had attended the Gynaecology Outpatient Department (OPD) within the duration of the study period.

Inclusion criteria: Patients with complaints of either AUB (intermenstrual bleeding or spotting, menorrhagia or polymenorrhoea) of three months duration or more, or inability to conceive (atleast 12 months duration) and had given their consent for office hysteroscopy as a part of evaluation were included in the study.

Exclusion criteria: Patients with diagnosed/suspected pregnancy, acute Pelvic Inflammatory Diseases (PID), and refusal to consent to the procedure were excluded from the study.

Study Procedure

The patients were divided into the infertility cohort (N=115) and the AUB cohort (N=112). The infertility cohort was subdivided into primary infertility (patients without any history of conception) (n=80) and secondary infertility (patients with a history of atleast one conception) (n=35).

The AUB cohort was divided on the basis of their age: AUB (40-44 years) (n=29), AUB (45-50 years) (n=49) and postmenopausal (>51 years) (n=34). Each of these age cohorts was further subdivided on the basis of parity: Nullipara, Primipara, and Multipara.

The office hysteroscopy was performed using normal saline as the distension media and a 4 mm calibre hysteroscope, without using any speculum, vulsellum, cervical dilators, or preprocedural misoprostol. No preprocedure or postprocedure prophylactic antibiotics were given and there was no need for any infective endocarditis prophylaxis in any patients.

STATISTICAL ANALYSIS

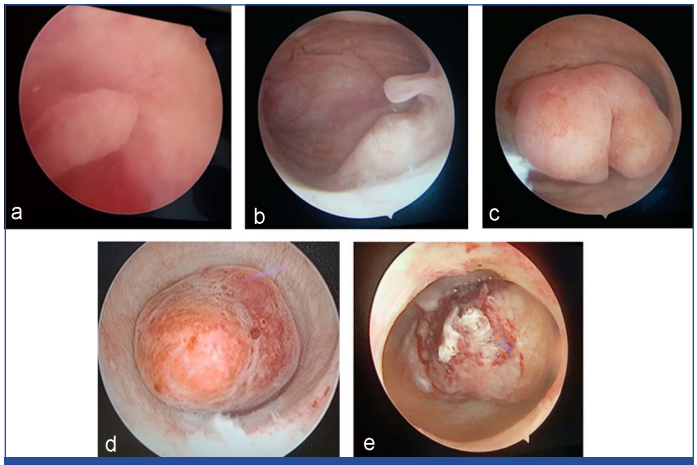
The data was analysed using Microsoft excel 2013 software and Statistical Package for Social Sciences (SPSS), Version 21.0. Results were expressed in terms of frequency and percentages.

RESULTS

The overall prevalence of endometrial polyp in present study was 19.82% (45 out of 227 patients) [Table/Fig-1]. The most common presenting complaint in the AUB group (40-44 years) and (45-50 years) was intermenstrual spotting [Table/Fig-2]. The images of endometrial polyp in different age groups is shown in the [Table/Fig-3]. The prevalence of endometrial polyp among the respective cohorts is as shown in [Table/Fig-4].

Complaints	Infertility (N=115)	AUB (40-44 years) (N=29)	AUB (45-50 years) (N=49)	Postmenopausal bleeding (>51 years) (N=34)
Asymptomatic	52	--	--	--
Menorrhagia	17	05	09	02
Intermenstrual spotting	08	10	16	--
Polymenorrhoea	16	07	11	--
Pain abdomen/ suprapubic pain	7	2	10	14
Postcoital bleeding	15	5	03	18

[Table/Fig-2]: Distribution of cases as per presenting complaints.



[Table/Fig-3]: Endometrial polyp in different study cohorts; a,b) Polyp in two different patients of infertility; c) Polyp in a patient of AUB (41 years of age); d) Polyp in a patient of AUB (47 years of age); e) Polyp in a patient with postmenopausal bleeding (52 years of age).

In the Infertility cohort, the prevalence was found to be 12.5% and 17.1%, respectively in the primary and secondary infertility subgroups [Table/Fig-5] and the overall prevalence was 13.91% with a mean age of 29.2 years (SD 3.2).

Sl. No.	Pathology Involved	Women with infertility (n=115) age: 25-35 years Mean±SD age: 29.2±3.2 years	Women with AUB (n=29) Age: 40-44years Mean±SD age: 42±1.16 years	Women with AUB (n=49) Age: 45-50 years Mean±SD age: 47.9±1.35 years	Postmenopausal bleeding women (n=34) Age:>51years Mean±SD age: 54.06±2.45 years	Total (n=227)	Total prevalence (%)
1.	Polyp	16 (13.9%)	5 (17.2%)	15 (30.6%)	9 (26.5%)	45 (19.82%)	19.82
2.	Others	27	10	23	14	74	32.61
(a)	Submucous fibroid	2	1	4	3	10	4.4
(b)	Arcuate uterus	8	Nil	Nil	Nil	8	3.52
(c)	Unicornuate uterus	2	Nil	Nil	Nil	2	0.88
(d)	Septate uterus	2	Nil	Nil	Nil	2	0.88
(e)	Polypoidal endometrium	3	3	10	2	18	7.92
(f)	Thick endometrium	Nil	Nil	5	6	11	4.84
(g)	Fluffy endometrium	1	2	1	2	6	2.84
(h)	Retained products of conception	Nil	1	Nil	Nil	1	0.44
(i)	Copper T check and removal	Nil	3	3	Nil	6	2.64
(j)	Bilateral periosteal fibrosis	7	Nil	Nil	Nil	7	3.08
(k)	Asherman Syndrome	2	Nil	Nil	1	3	1.32
3.	Normal study	72	14	11	11	108	47.57

[Table/Fig-1]: Hysteroscopic findings in the study group. There was no separate study group for women between 36-39 years.

Total endometrial polyps detected (45 in 227 patients)	Infertility (25-35 years) (n=115)	AUB (40-44 years) (n=29)	AUB (45-50 years) (n=49)	PMB (>51 years) (n=34)
Prevalence of endometrial polyp	13.9% (n=16)	17.2% (n=5)	30.6% (n=15)	26.5% (n=9)

[Table/Fig-4]: Prevalence of endometrial polyp among different cohorts of patients.

Type of infertility	Endo-metrial polyp	Others	Normal study	Prevalence of endometrial polyp (%)	95% CI	p-value
Primary Infertility (n=80)	10	20	50	12.5% (10/80)	0.05 - 0.20	0.269
Secondary Infertility (n=35)	6	07	22	17.1% (6/35)	0.05 - 0.30	

[Table/Fig-5]: Prevalence and associationof endometrial polyp among the Infertility study group. Chi-Square Test was used.

However, there was no significant association found between the presence of endometrial polyp and infertility (p-value-0.269) (p>0.05) [Table/Fig-5].

In the AUB cohort, the prevalence of endometrial polyp was 17.2% in the age group of 40-44 years, 30.6% in the age group of 45-50 years, and 26.5% in the postmenopausal age group of >51 years. There was a significant association between the presence of polyp and AUB (p-value=0.0257) (p-value <0.05). However, no association could be determined between parity and AUB within the individual cohorts because of the small sample sizes [Table/Fig-6].

Variables		Endome-trial polyp	Others	Normal study	Prevalence of endometrial polyp
AUB (40-44 years) (n=29)	Nullipara	3	2	2	17.2% (5/29)
	Primipara	0	3	5	
	Multipara	2	5	7	
	Total	5	10	14	
AUB (45-50 years) (n=49)	Nullipara	7	5	5	30.6% (15/49)
	Primipara	3	8	3	
	Multipara	5	10	3	
	Total	15	23	11	
Postmenopausal bleeding (>51 years) (n=34)	Nullipara	5	6	4	26.5% (9/34)
	Primipara	2	5	4	
	Multipara	2	3	3	
	Total	9	14	11	

[Table/Fig-6]: Prevalence of endometrial polyp among the AUB study group.

DISCUSSION

The present study shows an overall incidence of polyp as 19.82%. The prevalence of endometrial polyp among women with infertility was 13.9%, AUB (40-44 years) was 17.2%, AUB (45-50 years) was 30.6% and Postmenopausal bleeding (>51 years) was 26.5%, respectively.

There was a significant variation in the prevalence of endometrial polyp in patients with infertility as shown in [Table/Fig-7], with the overall prevalence ranging from 3.5-9.89% [8-11]. In all these studies, the proportion of primary infertility patients was nearly twice of that of secondary infertility patients (thrice in the case of the study conducted by Nanaware SS et al., [8]. However, the prevalence of polyps was higher in patients with secondary infertility in the studies conducted by Nanaware SS et al., [8] and Siddiqui M et al., [9], whereas the prevalence was higher in patients with primary infertility in the studies conducted by Elbareg AM et al., [10] and Gandotra N [11]. This can be attributed to the difference in sample sizes of all these studies as well as the difference in the population that was studied. The present study showed a greater prevalence of polyp in secondary infertility patients (17.1%) than the primary infertility patients (12.5%).

The association between endometrial polyps causing subfertility is still not well understood. Some of the reasons may be mechanical interference with sperm transport, distortion of the uterine cavity, embryo implantation or intrauterine inflammation, or due to the increased levels of implantation-inhibiting factors like glycodelin, which alters fertilisation and reduces endometrial receptivity to implantation [12]. The outcome of polypectomy in the infertility subgroup of present study patients has not been included in the study.

The prevalence of endometrial polyps in present study population with AUB (40-44 years) and AUB (45-50 years) was 17.2% and 30.6%, respectively, and a combined prevalence was 25.64% [Table/Fig-8]. This was comparable to the findings of Katke RD and Zarariya AN, and Choudhary J et al., who had reported a hysteroscopic prevalence of 22.7% and 16%, respectively [13,14].

Parameters	Katke RD and Zara-riya AN (2015) [13]	Choudhary J et al ., (2017) [14]	Present study, 2022
Sample size	66	50	78
Place of the study	Mumbai, India	Jaipur, India	AFMC Pune, India
Age group (years)	40-45	40-55	40-50
Endometrial polyp (prevalence)	15 (22.7%)	8 (16%)	20 (25.64%)

[Table/Fig-8]: Comparison of different studies involving hysteroscopy and endo-metrial polyp in perimenopausal AUB and present study [13,14].

The prevalence of endometrial polyps in present study population with postmenopausal bleeding was 26.5%, which was significantly different from the prevalence reported by Junnare KK et al., and Godi P and Verma P [Table/Fig-9] who performed similar hysteroscopic studies in postmenopausal women [15,16]. The variation can be attributed to the difference in the sample size in all these studies.

Parameters	Junnare KK et al., (2019) [15]	Godi P and Verma P (2020) [16]	Present study, 2022
Sample size	100	50	34
Place of the study	SKNMC, Pune, India	Lucknow, India	AFMC Pune, India
Endometrial polyp (prevalence)	13 (13%)	25 (50%)	9 (26.5%)

[Table/Fig-9]: Comparison of different studies involving hysteroscopy and endometrial polyp in postmenopausal bleeding and present study [15,16].

Parameters	Nanaware SS et al., (2016) [8]	Siddiqui M et al., (2020) [9]	Elbareg AM et al., (2014) [10]	Gandotra N (2018) [11]	Present study, 2022
Total (N)	85	273	200	100	115
Place of the study	Mumbai, India	Dhaka, Bangladesh	Sirt, Libya	Jammu, India	AFMC Pune
Primary infertility patients (np)	67	169	130	67	80
Secondary infertility patients (ns)	18	104	70	33	35
Polyp (Prevalence)	3 (3.5%)	27 (9.89%)	19 (9.5%)	7 (7%)	16 (13.91%)
Polyp in primary infertility patients (prevalence)	2 (2.98%)	11 (6.5%)	14 (10.36%)	5 (7.5%)	10 (12.5%)
Polyp in secondary infertility patients (prevalence)	1 (5.55%)	16 (15.4%)	5 (7.14%)	2 (6.1%)	6 (17.1%)

[Table/Fig-7]: Comparison of different studies involving hysteroscopy and endometrial polyp in infertility and present study [8-11].

Polyps in these cohorts of patients also run the risk of malignancy. The risk of malignancy in endometrial polyps increases with age, symptomatic bleeding, postmenopausal status, use of Tamoxifen and Hormone replacement therapy, obesity, and hypertension [17]. There was no malignancy detected in any of index patients as per the histopathological reports.

Visualisation and direct removal of polyps have been reported to be effective treatment with a lower recurrence rate, compared with removal with polypectomy forceps after hysteroscopic visualisation. Office hysteroscopic polypectomy can be performed using either a bipolar electrode resectoscope or small diameter Hysteroscopic Tissue Removal systems (HTRs). A study has revealed, no difference between the two in terms of complete removal and recurrence of polyps at a one-year follow-up. HTRs polypectomy, however, resulted in less pain and significantly quicker time of procedure compared to bipolar electrodes [18].

Limitation(s)

In the infertility cohort, the size of primary infertility patients was more than twice the size of secondary infertility patients. A more comparable size would have given a more appropriate prevalence rate. Similarly, there is a large variation in the sample size of the infertility cohort, AUB cohort, and postmenopausal patients cohort, which might have led to the large variation in the prevalence as well. This was because the above-mentioned studies have focussed exclusively on one group of patients, whereas the present study included consecutive patients with infertility, perimenopausal AUB as well as postmenopausal bleeding.

CONCLUSION(S)

Endometrial polyp is a significant pathology in women with infertility and AUB. Office hysteroscopy is a valuable, simple, low-risk, effective, and safe intervention that gives a quick and confirmatory diagnosis. It should be included in the Gynaecological assessment of women with AUB and infertility.

REFERENCES

[1] Clark TJ, Middleton LJ, Am Cooper N, Diwakar L, Denny E, Smith P, et al. A randomised controlled trial of Outpatient versus inpatient Polyp Treatment (OPT) for abnormal uterine bleeding. Health Technol Assess. 2015;19(61):01-194.

[2] Nijkang NP, Anderson L, Markham R, Manconi F. Endometrial polyps: Pathogenesis, sequelae and treatment. SAGE Open Medicine. 2019;7:2050312119848247.

[3] Levy RA, Kumarapeli AR, Spencer HJ, Quick CM. Cervical polyps: Is histologic evaluation necessary? Pathology-Research and Practice. 2016;212(9):800-03.

[4] Cunningham GF, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Cassey BM, et al. Williams Obstetrics, 25th Edition (Section 10.36, page 654), New York, McGraw-Hill Education; 2018.

[5] Uglietti A, Buggio L, Farella M, Chiaffarino F, Dridi D, Vercellini P, et al. The risk of malignancy in uterine polyps: A systematic review and meta-analysis. Eur J Obstet Gynecol Reprod Biol. 2019;237:48-56.

[6] Genovese F, Di Guardo F, Monteleone MM, D'Urso V, Colaleo FM, Leanza V,et al. Hysteroscopy as an investigational operative procedure in primary and secondary infertility: A systematic review. Int J Fertil Steril. 2021;15(2):80.

[7] Tsonis O, Gkrozou F, Dimitriou E, Paschopoulos M. Comparative retrospective study on transvaginal sonography versus office hysteroscopy in the diagnosis of endometrial pathology among different subgroups. J Obstet Gynaecol Res. 2021;47(2):669-78.

[8] Nanaware SS, Saswade M, Shende PN, Gaikwad P, Mahana S, Kirane A, et al. Role of hysterolaparoscopy in the evaluation of female infertility in tertiary care centre. Int J Contem Med Res. 2016;3(10):3063-65.

[9] Siddiqui M, Ghafoor N, Naznine F, Abdullah R, Chowdhury T. Hysteroscopic evaluation in infertility: Bangladesh Perspective. J South Asian Federation of Obstet Gynaecol. 2020;12(1):08.

[10] Elbareg AM, Essadi FM, Anwar KI, Elmehashi MO. Value of hysteroscopy in management of unexplained infertility. Asian Pacific J Reproduc. 2014;3(4):295-98.

[11] Gandotra N. Role of diagnostic hysteroscopy in establishing the diagnosis of female infertility. Int J Clin Obstet Gynaecol. 2018;2(6):27-30.

[12] Al Chami A, Saridogan E. Endometrial polyps and subfertility. J Obstet Gynaecol of India. 2017;67(1):09-14.

[13] Katke RD, Zarariya AN. Use of diagnostic hysteroscopy in abnormal uterine bleeding in perimenopausal age group and its clinicopathological co-relation with ultrasound and histopathology findings: experience in a tertiary care institute. Int J Reprod Contracept Obstet Gynecol. 2015;4(2):413-18.

[14] Choudhary J, Acharya V, Jain M. Evaluation of abnormal uterine bleeding with transvaginal sonography and hysteroscopy in perimenopausal women. Int J Reprod Contracept Obstet Gynecol. 2017;6(8):3607-13.

[15] Junnare KK, Desai GJ, Shekhawat GS. Hysteroscopy: An effective tool in postmenopausal bleeding. Int J Reprod Contracept Obstet Gynecol. 2019;8(1):159-65.

[16] Godi P, Verma P. Prevalence of hysteroscopic findings in postmenopausal bleeding patients and its correlation with clinicohistopathologic diagnosis. J South Asian Federation of Obstet Gynecol. 2020;12(6):354.

[17] Karakaya BK, Ozkan NT, Kansu-Celik H, Coskun B, Saridogan E, Evliyaoglu O, et al. Malignancy risk of endometrial polyps among geriatric women. Int J Gerontol. 2018;12(3):215-17.

[18] Ceci O, Franchini M, Cardinale S, Cannone R, Giarrè G, Fascilla FD, et al. Comparison of endometrial polyp recurrence in fertile women after office hysteroscopic endometrial polypectomy using two widely spread techniques. J Obstet Gynaecol Res. 2020;46(10):2084-91.

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