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OUTPATIENT DIAGNOSTIC HYSTEROSCOPY

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INTRODUCTION

Diagnostic hysteroscopy is not a new procedure. It was successfully performed more than 120 years ago albeit using rather crude instruments. With advances in techniques of uterine distension and illumination, the procedure has become more sophisticated allowing more lattitude in its application.

Diagnostic hysteroscopy has advanced to encompass many facets of gynaecological investigation, especially in oncology and infertility. New and relevant indications constantly arise and horizons are limited only by the enthusiast's imagination.

Whilst traditional dogma suggests that women with abnormal bleeding patterns be investigated by dilatation of the cervix and endometrial curettage under anaesthesia (D & C), several drawbacks inherent in this procedure exist.

Patients may be frail and unfit for general anaesthetic, necessitating prolonged admission. The operation is often delegated to junior staff, resulting in a possibly incomplete procedure occasionally complicated by uterine perforation and bleeding.

Tissue samples for histological diagnosis are not always obtained, and D & C is unhelpful for diagnosing functional bleeding disorders. It seldom has any therapeutic benefit in irregular bleeding, particularly in younger women. Curettage is of limited value in establishing the presence of focal endometrial lesions. Polyps and submucous fibroids may easily be missed.

Many causes of postmenopausal bleeding are attributable to endometrial atrophy, which condition may also exist in Asherman's Syndrome. Clearly, uterine curettage is unable to satisfactorily establish this diagnosis with any degree of certainty.

D & C may fail to confirm the presence of neoplastic disease if the lesion is small and inaccessible, and the writer has on two occasions hysteroscopically diagnosed endometrial carcinoma missed in patients previously subjected to D & C.

Curettage is costly in terms of staff, hospital and theatre resources. This has spurred development of alternative methods for the investigation of women with abnormal bleeding patterns. These other techniques include endometrial biopsies, cytology evaluation and vacuum aspiration of uterine contents.

A groundswell of informed gynaecological opinion suggests a move away from diagnostic curettage towards the savings and benefits arising from diagnostic hysteroscopy.

Further value accrues by employing hysteroscopy in an outpatient setting, with novel indications becoming useful and routine in the diagnostic armamentarium after satisfactory evaluation.

Far from being another technique in search of an application, the practitioner will perceive the benefit of diagnostic hysteroscopy to the Gynaecologist, patient and hospital administration alike.

The writer proposes to outline experience in Outpatient Diagnostic Hysteroscopy accumulated over a two year period at Plymouth General Hospital. This data was presented at the 25th SASOG Congress in Cape Town and published in the April 1990 British Journal of Obstetrics & Gynaecology, with an editorial on the subject.

LITERATURE REVIEW : DIAGNOSTIC HYSTEROSCOPY

A vast amount of data has accumulated relevant to the use of the hysteroscope. As the sophistication of the instrument increased, it became more useful as a diagnostic tool and recently the degree of technological advance is such, that a spectrum of surgical applications of the instrument is feasible.

Allied to this is the realisation that diagnostic curettage suffers serious drawbacks, many of which are redressed by hysteroscopy. As use of the instrument increased in popularity its indications expanded.
The literature documented further expansion in the fields of outpatient diagnostic hysteroscopy and operative hysteroscopy.

HISTORICAL PERSPECTIVE

In 1973 Lindemann[1] reviewed the development of hysteroscopy. The first successful visualisation of the uterine cavity in a living subject was performed by Pantaleoni in 1869, diagnosing an endometrial polyp in a 60 year old woman[2]. Her intractable uterine bleeding was cured after cautery of the polyp with silver nitrate.

Nitze[3] produced an innovative instrument in 1879, incorporating the light source within an endoscopic tube. Although primarily a cystocope, the device was used for hysteroscopy, allowing a wide field of vision with satisfactory illumination.

Rubin[4] introduced carbon dioxide distension of the uterine cavity in 1925, with Mikulicz-Radecki perfecting a biopsy capability. A major advance came in 1952 when Vulmiere, Fourestier and Gladu introduced cold light fibreoptics to endoscopy[4]. This allows powerful illumination of the visual field by means of an external halogen lamp.

The earliest contact hysteroscope appeared in 1965 and Vulmiere and co-workers perfected the design. Jacques Hamou of the University of Paris Hospital invented the Hamou Microcolpohysteroscope[4] in 1980, producing an instrument widely used to-day.

Modern technology permits a variety of intra-uterine procedures including endometrial ablation. In 1983 De Cherney and Polan described endometrial cautery using a cystoscope-resectoscope[5]. The field of hysteroscopic surgery has expanded to encompass endometrial resection[6] and

more recently laser ablation in women with abnormal uterine bleeding.

The recent introduction of the YAG laser allows a degree of flexibility in the application of laser surgery, including the possibility of uterine septum resection and other forms of uteroplasty.

LITERATURE REVIEW : DIAGNOSTIC HYSTEROSCOPY

Hysteroscopic inspection of the uterine cavity offers a simple outpatient method for investigating uterine, endometrial or endocervical pathology[7]. Lewis amplified this view[8] and recently published an editorial on the subject[9].

Hamou & Taylor[4] and others have defined the indications for panoramic hysteroscopy and refined the technology. Valle[11] observed in 1978 that hysteroscopy was necessary in any situation when it was helpful to look inside the uterus to make a diagnosis or guide therapy.

Many clinical applications of hysteroscopy have been described and acceptance of outpatient utilisation has

become apparent,[23,26] after initial use of the procedure without anaesthesia[4,20,21,22].

Whilst the procedure has been practiced for many years on the Continent of Europe,[21] the advantages have not been widely accepted in parts of the English-speaking world[9,10,14,15]. Recognition arises from a perception of the disadvantages attendent on the use of D & C.

As far back as 1958, Word et al[27] published an article entitled "The fallacy of simple uterine curettage". Dissatisfaction with the procedure has increased[28], particularly amongst Gynaecologists with access to relatively inexpensive hysteroscopy equipment.

The inadequacy of dilatation and curettage in obtaining representative tissue has been reported by Stock and Kanbour[12]. Davey[13] suggested error may arise if the lesion is small or inaccessible.

Recent reports highlight the disadvantages of diagnostic curettage[9,14,15] pointing out the expense, inconvenience, morbidity and poor yield of pathology particularly in younger women[24].

Comparative studies suggest the superiority of panoramic hysteroscopy over dilatation and curettage in the investigation of patients with a variety of gynaecological disorders[8,16,17,18].

This is reinforced by a recent report emphasising the great accuracy of hysteroscopy in establishing a diagnosis of intra-uterine pathology[19].

INDICATIONS AND CONTRA-INDICATIONS FOR DIAGNOSTIC HYSTEROSCOPY

Perhaps the widest use of the technique is in the field of abnormal uterine bleeding.

In 1957 Englund and co-workers[29] described hysteroscopy in the diagnosis and treatment of uterine bleeding, and abnormal bleeding remains the most popular indication[37]. Thirty years ago Gribb[30] recognised the potential of hysteroscopy in gynaecological diagnosis, but the initial promise of the technique has until recently been unrealised.

Postmenopausal bleeding is well-suited to investigation by this method[31,38] and 10% of these patients will be found to have neoplastic disease[15]. Hysteroscopy is ideally suited in the evaluation of intra-uterine neoplasia[32], and is probably superior to curettage in this regard[33,34]. The risk of malignant tissue dissemination by uterine distension remains theoretical and unproven[7].

Since endometrial atrophy is a common cause of postmenopausal bleeding[19], curettage often results in a tissue sample unsuitable for histological assessment. The report not uncommonly classifies material as being too scanty for accurate appraisal. Loffer recently addressed this issue and pointed out the value of a negative

hysteroscopic view in cases of endometrial atrophy[19]. The patient may immediately be reassured by the finding of a uterine cavity devoid of neoplastic growth. Thus the diagnosis of endometrial atrophy is positively established, and not presumed by failure to obtain tissue at curettage.

Infertility lends itself to hysteroscopic investigation[35]. The technique is particularly valuable in the evaluation of female infertility when compared with hysterography[35,36]. Lewis makes a plea for hysteroscopy to replace hysterosalpingography as a method of diagnosing congenital abnormalities of the uterus[7], or submucous fibroids in patients with recurrent abortions. The offending fibroids may be successfully removed using hysteroscopic surgical techniques[39].

Early pregnancy failure is conveniently investigated by hysteroscopy[43], being more valuable and no more uncomfortable than hysterosalpingography. In the diagnosis and management of intra-uterine synechiae, hysteroscopy has proved superior to all other investigative and therapeutic modalities[40,41,42].

With the widespread use of routine Papanicolaou smears, cytologists occasionally report endometrial cells present alongside cervical cells. In these cases hysteroscopy

allows thorough assessment of the endocervical canal[11] and also conveniently excludes intrauterine pathology.

Certain hysteroscopes allow cytological evaluation of tissues by means of focussing devices. After staining with an appropriate medium, the trained operator may gain some idea of the nature of tissue by contact microhysteroscopy[4]. This technique is probably beyond the scope of most hysteroscopists but may be of use in gynaecological oncology to assess and "stage" genital malignancy. In all cases where the diagnosis of neoplastic disease is entertained, a tissue biopsy with histological review is essential.

Intra-uterine coantraceptive devices have gained wide acceptance but occasionally fracture upon removal. Curettage may conveniently extract an intact device with absent or hidden strings, but complete retrieval of a damaged IUCD presents a problem. The author has on occasions visualised and removed pieces of a broken contraceptive device under local anaesthetic. A small grasping forceps attachment simplifies this process.

Further indications may arise as the technique becomes more popular and widespread, particularly as contra-indications for the procedure are few.

As discussed elsewhere, the two most important contra-indications remain active pelvic infection and pregnancy. Whilst active uterine bleeding does not prohibit the procedure, blood obscures the field of vision to a certain extent. It is generally possible to obtain a satisfactory view despite fairly active uterine haemorrhage, since the CO_2 flow givs a clear field of vision beyond the instrument.

Hysteroscopy is contra-indicated in an ongoing pregnancy, but may be useful to exclude retained products causing bleeding after pregnancy failure and uterine evacuation[9].

OUTPATIENT DIAGNOSTIC HYSTEROSCOPY

AIMS OF THE STUDY

The aim of the study was to evaluate patient acceptance of diagnostic hysteroscopy using a 4mm diameter panoramic hysteroscope, performed in an outpatient setting under a paracervical block[14]. Taylor and Hamou[10] reported a series of 959 examinations without any anaesthesia as an office procedure. Most women considered the pain was less than that experienced during hysterosalpingography (presumably also performed without anaesthesia).

The pain was comparable to normal menstruation in 490 cases, 50 experienced greater discomfort, and 360 felt little or no pain.

Mencaglia and colleagues[25] reported a series of 638 women over 45 years of age who underwent hysteroscopy as an outpatient procedure. Three percent required general anaesthesia because of cervical stenosis.

While these studies assured patient acceptance without premedication or analgesia, it was considered that a paracervical block would diminish patient discomfort. Anxiety hightens apprehension prior to procedures of this nature, so a secluded setting, unhurried schedule and sympathetic nurse would be reassuring to investigations

perceived by patients as painful or alarming.

Assessment of subjective discomfort of hysteroscopy performed under local anaesthetic had not been reported. A prospective study of the procedure under regional anaesthesia would evaluate the usefulness (or otherwise) of the investigation. A further aim was to compare the accuracy of biopsy findings with the subsequent histology results.

OUTPATIENT DIAGNOSTIC HYSTEROSCOPY

SUBJECTS AND METHODS

The city of Plymouth and the adjacent countryside has a population of some 400 000 people served by the Plymouth General Hospital. Patients are referred to Gynaecology Outpatients by General Practitioners for assessment of gynaecological disorders. Subjects were selected for hysteroscopy by the Specialist to whom they had been referred.

Referral criteria included any patient who would benefit from panoramic hysteroscopy with endometrial sampling where appropriate. This included women who were elderly, infirm or otherwise unfit for a procedure to be performed under general anaesthesia. A few women were excluded from outpatient hysteroscopy because of extreme anxiety. Nulliparous women or those with a previous cone biopsy were included in the study. The procedure was not performed with reference to the phase of the menstrual cycle. All women had had a cervical smear negative for malignancy, but some had cervical intra-epithelial neoplasia. Under these circumstances, colposcopy was performed immediately prior to diagnostic hysteroscopy.

In a 2 year period until December 1989, 328 patients underwent outpatient diagnostic hysteroscopy under local

anaesthetic. The great majority of the examinations were performed by the writer.

An outpatient suite was prepared specifically for the procedure. Each patient was allocated 30 minutes for examination, allowing sufficient time to explore her anxieties. The procedure was explained in an unhurried manner and informed verbal consent obtained. An experienced nurse was at hand to assist the patient into the lithotomy positon on the examination couch and supply reassurance. No premedication was used.

TECHNIQUE OF DIAGNOSTIC HYSTEROSCOPY

A standard Cusco bivalve speculum was passed. Analgesia was provided by a paracervical block of 4 ml. Lignocaine 1%, using a dental syringe. The anterior lip of the cervix was grasped by a single tooth vulsellum after infiltration with a small amount of lignocaine. This facilitated painless manipulation and traction of the cervix during the procedure. Panoramic hysteroscopy was performed using the method described by Taylor and Hamou[4] with a STORZ 4 mm rigid hysteroscope and a Rimmer Bros. "HYSTEROFLATOR" CO_2 uterine insufflator. A STORZ cold light source with fibre-optic cable allowed adequate illumination. Prior cervical dilatation was not done.

Although no reference was made to the phase of the menstrual cycle when booking patients for the procedure (due to logistical difficulties), hysteroscopy during the proliferative phase of the endometrial cycle affords the clearest view. At that time the endometrium is thin; premenstrually a thicker endometrium may be confused with polyps or even hyperplasia.

A CO_2 "cushion" ahead of the hysteroscope creates a passage allowing smooth and gentle introduction of the instrument to the uterine cavity. The device is advanced under direct vision to avoid accidental perforation of the uterus.

Some pressure is often required to allow passage of the instrument; however, excessive force is never desirable. Where cervical stenosis exists, patients are best referred for the procedure under general anaesthesia.

Once the uterine cavity is entered, a panoramic view of the interior is obtained. By rotating the instrument, all uterine surfaces and the tubal ostia are inspected. Any lesions are carefully examined and their form, size and position noted.

After a thorough assessment of the uterine cavity, an endometrial biopsy was taken where appropriate, using a "Rolon Acurette" disposable endometrial sampler (Rocket of London). All tissue was sent for histological examination.

Occasionally bubbles obscured the view of the cavity - merely waiting a few seconds allowed the bubbles to burst and the field of vision to clear.

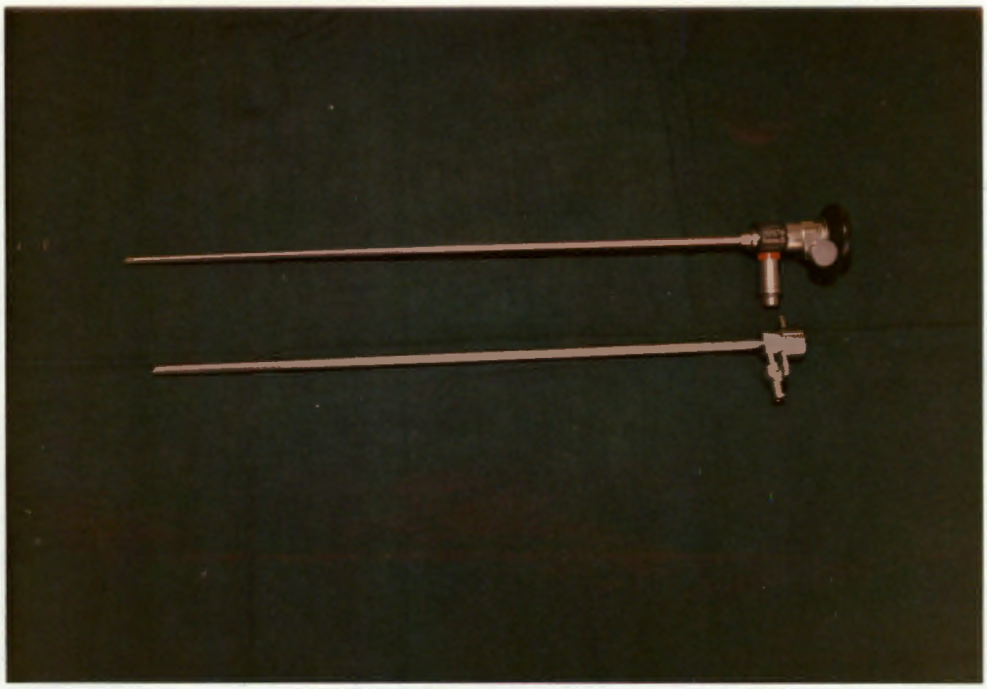
By indenting the endometrium, the operator could estimate endometrial thickness.

Hysteroscopy during menstruation is feasible, but may take patience while awaiting dissipation of menstrual effluent obscuring the view.

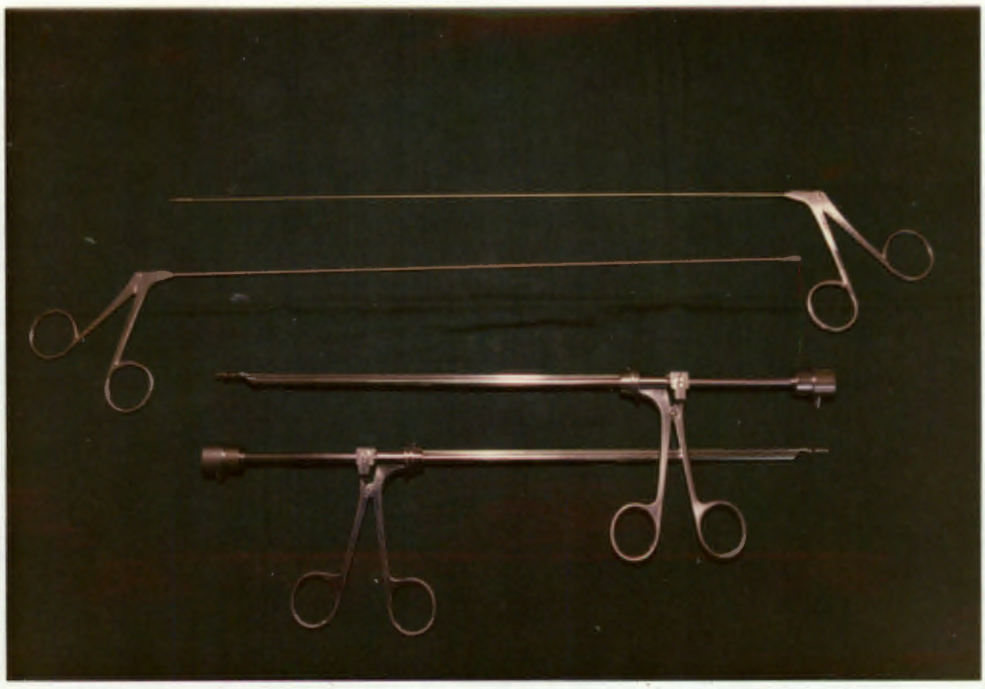
After the procedure, the findings were explained to the patient and her subjective response recorded on a specially designed proforma. The level of pain and discomfort experienced during the examination was matched to one of five categories listed below:

1.	INTOLERABLE PAIN	Hysteroscopy examination terminated immediately.
2.	BARELY TOLERABLE PAIN	Patient able to bear discomfort for a short time only.
3.	TOLERABLE DISCOMFORT	Pain equivalent to menstrual cramps and spasms.
4.	ACCEPTABLE DISCOMFORT	Pain level uncomfortable but easily bearable.
5.	EASILY ACCEPTABLE DISCOMFORT	Minimal pain experienced during the procedure.

Follow-up and recommendations for further management, where appropriate, was at gynaecology outpatients department. Ethical approval for the study was obtained from the District Hospital Ethics Committee.



DIAGNOSTIC HYSTEROSCOPE WITH SHEATH.



VARIOUS BIOPSY FORCEPS ATTACHMENTS.

STORZ LIGHT SOURCE WITH FIBRE OPTIC CABLE.

CO_2 UTERINE INSUFFLATOR.

OUTPATIENT DIAGNOSTIC HYSTEROSCOPY

RESULTS

A total of 328 patients were included in this study, the youngest being 21 years and the oldest 85 years of age. The reasons for referral for hysteroscopy are summarised in Table 1. Postmenopausal bleeding was the most common indication for the procedure.

TABLE 1

INDICATIONS FOR REFERRAL	n = 328	
Postmenopausal bleeding	124	(38%)
Menorrhagia and other menstrual abnormalities	78	(24%)
Perimenopausal bleeding	65	(20%)
Intermenstrual bleeding	33	(10%)
Abnormal cells on PAP smear	8	
Other: Infertility, IUCD removal, etc.	20	

The uterine cavity could be inspected adequately in 314 of 328 cases. Failure was invariably due to stenosis or obstruction of the cervical canal, in which case the patient was referred for a procedure under general anaesthetic.

The hysteroscopic findings were as follows: (Table 2)

TABLE 2.

SUMMARY OF HYSTEROSCOPIC FINDINGS	n = 314
No abnormality detected	161 (50%)
Atrophic endometrium	60 (20%)
"Fibroid" polyps	34 (10%)
Endometrial polyps	23 (7%)
Suspected neoplasia	26 (8%)
Uterine abnormality	5
Uterine synechiae	2

A second examination under general anaesthesia was performed in 49 patients for the following reasons: (Table 3)

TABLE 3.

INDICATION FOR SURGICAL INTERVENTION		n = 49
Number of Patients	Indication	Histology Results
35	Polpectomy	Benign 34 Neoplastic 1
5	Suspected malignancy with inadequate biopsy specimen	Ca endometrium 2 Glandular hyperplasia 2 Normal curettings 1
9	Poor view of cavity	Ca endometrium 1 Benign polyps 3 Normal endometrium 3 No curettings 2

Biopsy material suitable for pathological assessment was obtained in most cases except when the endometrium was atrophic. Histology findings were as follows: (Table 4)

TABLE 4.

SUMMARY OF HISTOLOGICAL FINDINGS n = 247

Normal endometrium (Proliferative phase 88) (Secretory phase 48)	136 (55%)
Atrophic endometrium	40 (16%)
Benign polyps	37 (15%)
Menstrual endometrium	9 (4%)
Endometrial hyperplasia (9 No Atypia) (4 With Atypia)	13 (5%)
Ca Endometrium	10 (4%)

Hysteroscopic and histology findings showed good correlation. However, in 3 cases suspected neoplasia was not confirmed histologically, and in 1 case a hysterectomy specimen showed unexpected benign endometrial hyperplasia. One uterine polyp was found to be hyperplastic, and in 2 cases ovarian pathology was discovered in hysterectomy specimens.

The patients' subjective responses are illustrated in Fig.1. Most women described the procedure as acceptable and 94% found the discomfort no greater than that of menstruation.

PAIN & DISCOMFORT : SUBJECTIVE RESPONSE.

n = 328

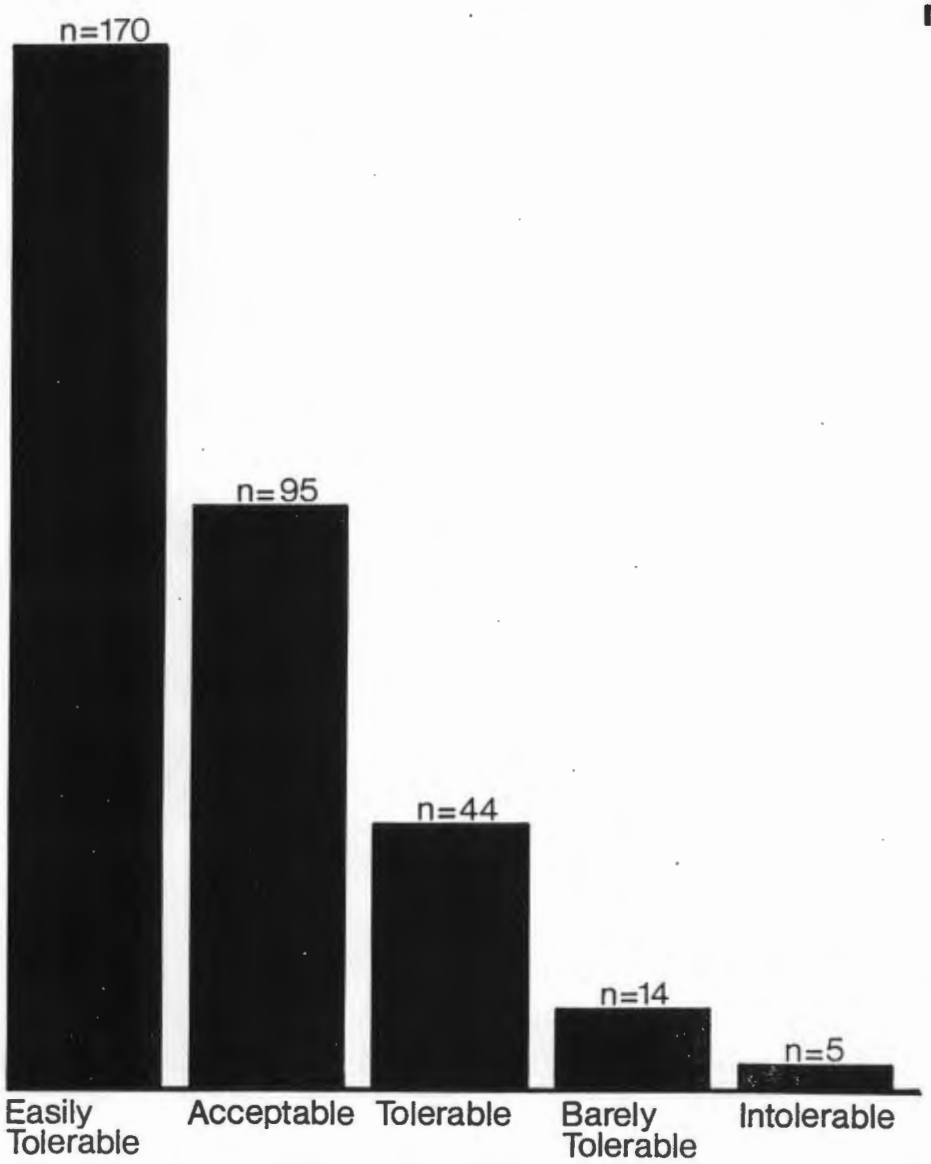


Fig. 1.

No complications attributable to the procedure occurred, and no subject required admission after hysteroscopy. Side effects were generally mild and transient, including abdominal cramps, shoulder tip pain, and vagal attacks in two women. Two patients experienced severe discomfort and the procedure was abandoned. They were referred for procedures under general anaesthesia.

OUTPATIENT DIAGNOSTIC HYSTEROSCOPY:

DISCUSSION

This study confirms that out-patient diagnostic hysteroscopy under local anaesthesia offers an acceptable alternative to procedures under general anaesthesia[21].

A point at issue is whether hysteroscopy should be performed without analgesia with a paracervical block, or under general anaesthesia[8]. The patients included in this study were not randomly selected but represented the majority of women requiring investigation for abnormal genital tract bleeding. Women who were extremely anxious in the out-patient department were referred for in-patient procedures under general anaesthesia, but patients who had had a cervical cone biopsy and nulliparous women were included in this study. Certain patients were specifically referred to this service if their health made general anaesthesia undesirable. Elderly and infirm patients appeared to tolerate the procedure with ease.

Many methods are available for endometrial investigation including diagnostic curettage and a variety of techniques for endometrial biopsy. Lewis suggested that hysteroscopy be performed in all patients in whom diagnostic curettage is indicated and advises hysteroscopy in place of the more traditional approach[8]. Workers, including Smith and Schulman[24] have noted that the practice of routine

diagnostic curettage for abnormal uterine bleeding provides a low yield of cancer diagnosis and they suggest a review of selection criteria for this investigation.

In the present study 50% of patients had no demonstrable uterine pathology. The ten endometrial carcinomas were all in the post-menopausal group, the youngest patient being 52 years. Intra-uterine pathology seems to be age related with endometrial abnormalities rarely seen in women below 35 years of age.

Hysteroscopy allows a thorough inspection of the uterine cavity, thus facilitating an accurate diagnosis with appropriate biopsy and therapeutic intervention. Thirty-five patients were found to have polyps within the uterine cavity; such abnormalities may well be missed by conventional methods of endometrial investigation. These patients required elective admission for polypectomy, and information about the number, size and position of the lesions facilitated their removal.

In one patient with endometrial carcinoma an inadequate view through the hysteroscope necessitated admission for formal hysteroscopy under general anaesthesia with a biopsy and histological confirmation. In five patients endometrial malignancy was suspected at hysteroscopy but histological

examination showed glandular hyperplasia. This emphasizes that hysteroscopy without biopsy is unreliable for establishing the diagnosis of endometrial malignancy. The difference between pre-malignant and malignant disease may be subtle[7], both from a hysteroscopic and a histological point of view.

To the best of my knowledge, no malignancy was overlooked in any of our patients undergoing hysteroscopy.

Most patients found the procedure acceptable. The level of discomfort experienced by the majority was tolerable. The greatest pain was experienced by women described as being anxious. The role of the clinic nurse in providing a relaxed and friendly ambience is vital when performing these procedures.

No pre-medication was offered in this study, but mefanamic acid was given to any patient experiencing uncomfortable uterine cramps. The level of anaesthesia afforded by paracervical block was generally satisfactory: 94% of all women described the discomfort as no worse than that experienced during menstruation. The degree of discomfort was not related to the age or parity of the patients. No short or long term sequelae were reported by any patient other than transient "dysmenorrhoea-type" pain.

While some discomfort during hysteroscopy is not uncommon, these symptoms must be weighed against the pain often experienced after D & C. Abdominal discomfort following D & C is not only common, but often accompanied by unpleasant side-effects of the general anaesthetic. Even simple endometrial sampling is not painless.

Any discomfort during outpatient hysteroscopy is regrettable - but this must be seen in the light of the hazards and drawbacks inherent in other investigative methods.

Women do not generally expect relatively invasive procedures to be performed in an out-patient setting, but well motivated subjects easily accept the inconvenience of procedures performed whilst awake in lithotomy position. Most are delighted by the surprisingly brief period of discomfort.

The skillful operator acquires a degree of dexterity with some rapidity, and the average examination is seldom of more than 4 minutes duration. The patient is appraised of the findings, and so the suspense of awaiting histology results is often avoided.

Subsequent to the study the writer has offered light sedation to anxious women and this premedication greatly enhanced patient acceptance of the examination in apprehensive subjects.

Operative hysteroscopy is probably best performed under general anaesthesia since the diameter of these instruments prohibits their use in the conscious patient. Few women can tolerate a 8mm diameter instrument without considerable pain.

In general, diagnostic hysteroscopy has a low complication rate[9].

Perforation of the fundus is avoidable if the instrument is only advanced under direct vision, and without the use of force.

Gas embolisation is avoidable if CO_2 is insufflated slowly by a hysteroflator[44]. Air introduced via a laparoflator or anaesthetic machine may cause air embolism with dangerous consequences. Safety is assured if low flow CO_2 is insufflated at a pressure below 100mm Mercury. The small quantity of CO_2 absorbed has no effect on blood pH or the patient's ECG[20].

In this study no serious complications occurred and no patient required admission to hospital as a result of the procedure.

OUTPATIENT DIAGNOSTIC HYSTEROSCOPY:

CONCLUSIONS

In the light of technological advances and innovations, newer techniques of gynaecological investigation are available. The drawbacks attendant on D & C have been discussed and the advantages of hysteroscopy noted.

Comparative studies suggest panoramic hysteroscopy provides a valid alternative to traditional D & C and therefore should be more widely used in clinical practice. The procedure is well-suited to outpatient venues without general anaesthesia.

While patients seldom expect invasive outpatient investigations in lithotomy position without general anaesthesia, adequate preparation and explanation in a suitable suite by a sympathetic operator is invariably satisfactory.

The procedure has few contra-indications. Highly strung poorly co-operative patients are unsuitable for outpatient procedures.

Pregnancy is regarded as a contra-indication, except perhaps in the case of bleeding following D & C for a missed

abortion. Hysteroscopy under these circumstances may identify a placental remnant.

Active pelvic infection mitigates against hysteroscopy since the distension medium may disseminate organisms.

Many comparative studies between panoramic hysteroscopy with directed biopsies and D & C, show there is little doubt that hysteroscopy is superior to D & C in making an accurate diagnosis of pathological conditions of the uterine cavity.

The debate will doubtlessly continue, but given the simplicity of operation, modest cost of equipment, elegance of diagnosis and the safety of a procedure under local anaesthetic, hysteroscopy should be available in most major gynaecological facilities.

Patients appreciate the convenience of avoiding admission in addition to the saving of time and expense. An immediate diagnosis is often available, sparing women an anxious delay before results would otherwise become known.

A wide variety of gynaecological disorders are amenable to hysteroscopic investigation, particularly in the field of abnormal uterine bleeding. Certain disorders i.e. Asherman's Syndrome, are especially suited to hysteroscopic evaluation.

This study confirms that outpatient diagnostic hysteroscopy offers a reliable method for assessing intra-uterine pathology and has definite advantages over conventional investigative methods.

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REFERENCES

1. Lindemann HJ. (1973) Historical aspects of hysteroscopy. Fertil Steril 24 : 230.

2. Pantaleoni D. Cited in Silander T : (1963) Hysteroscopy through a transparent rubber balloon in patients with carcinoma of the uterine endometrium. Acta Obstet Gynecol Scand 42 : 284.

3. Nitze M. (1879) Über eine neue behandlungsmethode der Hölen des menschlichen Körpers. Med. Pres. Wien, p. 851.

4. Hamou J. and Taylor, P. (1982) In: Current problems in Obstetrics & Gynaecology : Panoramic, contact, and microcolpohysteroscopy in gynecologic practice. Year Book Medical Publishers, Chicago, Vol. VI :2, p. 8.

5. De Cherney AH, Polan ML. (1983) Hysteroscopic management of intra-uterine lesions and intractable uterine bleeding. Obstet Gynecol 61; 392.

6. Magos AL, Baumann R & Turnbull, A. (1989) Transcervical resection of endometrium in women with menorrhagia. BMJ, 298; 1209.

7. Lewis BV. (1984) Hysteroscopy in gynaecological practice : a review. J Royal Soc Med 77; 235.

8. Lewis BV. (1989) Hysteroscopy. In Progress in Obstetrics & Gynaecology, Vol. 7 Studd J ed Churchill Livingstone, London p.305.

9. Lewis BV. (1990) Editorial, Br J Obstet Gyn 97; 283.

10. Taylor PJ.& Hamou J. (1983) Hysteroscopy. J Reprod Med 28; 359.

11. Valle RF. (1978) In: Obstetrics and Gynecology Annual. (Wynne RM ed) Applefor-Centuary-Crofts, New York.

12. Stock RJ. & Kanbour A. (1975) Prehysterectomy Curettage. Obstet Gynecol 5; 537.

13. Davey DA. (1986) Dysfunctional Uterine Bleeding. In Dewhursts Textbook of Obstetrics & Gynaecology for Post Graduates. (Whitfield CR. ed) Blackwell Scientific Publications, Oxford, p. 624.

14. De Jong PR, Doel F & Falconer AD. (1990) Outpatient Diagnostic Hysteroscopy. Br J Obstet Gyn Vol. 97; p. 299.

15. De Jong PR & Falconer AD. (1990) Abstract: Outpatient Diagnostic Hysteroscopy - report on 328 cases. SASOG Congress, Cape Town.

16. Gimpelson RJ, & Rappold HO. (1988) A comparative study between panoramic hysteroscopy with directed biopsies and dilatation and curettage. Am J Obstet Gynecol, 158; 489.

17. Valle RF. (1981) Hysteroscopic evaluation of patients with abnormal uterine bleeding. Surg Gynecol Obstet 153; 521.

18. Gimpelson RJ. (1984) Panoramic hysteroscopy with directed biopsies vs dilatation and curettage for accurate diagnosis. J Reprod Med 29; 6.

19. Loffer FD. (1989) Hysteroscopy with selective endometrial sampling compared with D & C for abnormal uterine bleeding : the value of the negative hysteroscopic view. Obstet Gynecol 73; 16.

20. Lindemann HJ, & Mohr J. (1976) CO_2 Hysteroscopy. AM J Obstet Gynecol 124; 129.

21. Mencaglia L, & Perino A. (1986) Diagnostic Hysteroscopy To-day. Acta Europaea Fertilitatis 17; 6 : 431.

22. La Scala GB, Sacchetti F, & Dessanti L. (1987) Panoramic Diagnostic Microhysteroscopy : Analysis of results obtained from 976 outpatients. Acta Obstet Gynecol Scand (Supplement) 144; 1.

23. Gordon AG, & Lewis BV. (1988) Gynaecological Endoscopy. Chapman & Hall, London. Ch. 9.

24. Smith JJ, & Schulman H. (1985) Current Dilatation and Curettage Practice : A need for revision. Obstet Gynecol 65 : 516.

25. Mencaglia L, Perino A, & Hamou J. (1987) Hysteroscopy in perimenopausal and postmenopausal women with abnormal uterine bleeding. J Reprod Med 32, 577-582.

26. Lewis BV (1988) Hysteroscopy in Clinical Practice. J Obstet Gynaecol 9; 47.

27. Word G, Gravlee LC, Wideman GL. (1958) The fallacy of simple uterine curettage. Obstet Gynecol 12 : 642.

28. Grimes DA. (1982) Diagnostic dilation and curettage : a reappraisal. Obstet Gynecol 3; 1.

29. Englund S, Ingelman-Sundberg A, Weston B. (1957) Hysteroscopy in diagnosis and treatment of uterine bleeding. Gynaecologia 143; 217.

30. Gribb JJ. (1960) Hysteroscopy : An aid in gynecologic diagnosis. Obstet Gynecol, 15; 593.

31. Cronje HS. (1984) Diagnostic hysteroscopy after postmenopausal uterine bleeding. S Afr Med J 66; 773.

32. Goldberg GL et al, (1986) Microhysteroscopy in evaluation of the endocervix in endometrial carcinoma. Gynecol Oncol 24; 189.

33. Silberberg SG. (1984) New aspects of endometrial carcinoma. Clin Obstet Gynecol. 11; 189.

34. Luikko P, Gronroos M, Punnonen R, Kilkken P. (1979) Methods of evaluating the intra-uterine location of carcinoma. Acta Obstet Gynecol Scan. 58; 1275.

35. Siegler AM. (1979) Hysterography and Hysteroscopy in the infertile patient. J Reprod Med 18; 94.

36. Valle RF. (1980) Hysteroscopy in the evaluation of female infertility. Am J Obstet Gynecol 137, 425.

37. Valle RF. (1981) Hysteroscopic evaluation of patients with abnormal uterine bleeding. Surg Gynecol Obstet 153; 521.

38. Mohr JW. (1978) Hysteroscopy as a diagnostic tool in postmenopausal bleeding. In: Phillips JM ed Endoscopy in Gynaecology. Downey, California. Am Assoc of Gyn Laparoscopists. p. 347.

39. Neuwith RS, Amin HK. (1976) Excision of submucous fibroids with hysteroscopic control. AM J Obstet Gynecol. 126; 95.

40. Hamou J, Salat-Baroux J, Siegler AM. (1983) Diagnosis and treatment of intrauterine adhesions by Microhysteroscopy. Fertil Steril 39; 321.

41. Taylor PJ, Cumming DC, Hill PJ. (1973) The significance of intrauterine adhesions detected hysteroscopically in eumenorrhoic infertile women and role of antecedent curettage in their formation. Am J Obstet Gynecol. 42; 3.

42. Sugimoto O. (1978) Diagnostic and therapeutic hysteroscopy for traumatic intrauterine adhesions. Am J Obstet Gynecol 131; 539.

43. March CH, & Israel R. (1987) Hysteroscopic management of recurrent abortion caused by septate uterus. Am J Obstet Gynecol 156; 834.

44. Gomar C, Fernandez C, Villonga A, Nalda MA. (1985) Carbon dioxide embolism during laparoscopy and hysteroscopy. Ann Fr Anaesth Re'anim 4; 380.