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ORIGINAL ARTICLE

A PROSPECTIVE STUDY ON ROLE OF HYSTEROSCOPY VS. TRANSVAGINAL SONOGRAPHY IN DIAGNOSIS OF ABNORMAL UTERINE BLEEDING

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ABSTRACT: AIMS AND OBJECTIVES: To study the demographic pattern of the patients and to evaluate causes of abnormal uterine bleeding in different menstrual phases using transvaginal sonography and diagnostic hysteroscopy. Evaluation of the validity of transvaginal sonography and hysteroscopy in various menstrual abnormalities and intrauterine pathologies. **MATERIAL AND METHODS:** Total 60 patients were selected with complaint of abnormal uterine bleeding who were in reproductive, premenopausal and postmenopausal phase of life and were grouped similarly. All patients were subjected for transvaginal sonography followed by hysteroscopy. **RESULTS:** Analysis of 60 cases were done, 21 (35%) cases were normal and 39 (65%) were having different uterine pathologies according to transvaginal sonography whereas 13 (21.66%) were normal and 47 (78.34%) were having uterine pathology as per hysteroscopy. In this study hysteroscopy was superior to TVS in detecting endometrial polyp and hyperplasia with sensitivity (100%), specificity (97.8%), positive predictive value (92.8%) and negative predictive value (100%) for polyp and 100%, 98.04%, 90% and 100% respectively for hyperplasia. Hysteroscopy shows 100% validity for submucous fibroid. TVS has better sensitivity (100%), specificity (98.2%) and NPV (100%) than hysteroscopy for detecting adenomyosis. TVS is superior to hysteroscopy in investigating endometrial carcinoma with 100%. Sensitivity, Specificity, PPV and NPV against hysteroscopic value of 66.6%, 100%, 100% and 98.2% respectively. Hysteroscopy has higher sensitivity (92.0%) NPV (69.2%) whereas TVS has higher specificity (100%), PPV (100%) in diagnosis of AUB. **CONCLUSION:** Diagnostic hysteroscopy and transvaginal sonography are complimentary to each other in management of patients with abnormal uterine bleeding.

KEYWORDS: Transvaginal Sonography, Abnormal Uterine Bleeding, Premenopausal phase.

INTRODUCTION: Abnormal uterine bleeding refers to a symptom of excessive, prolonged cyclic, unexpected or acyclic bleeding regardless of diagnosis or cause. AUB not only affects the quality of life such as intimate relationships, day-to-day living but can have serious adverse consequences as anemia or may be the result of underlying malignancy.[1, 2]

It is one of the most common gynaecological problems that health care providers face, accounting for approximately 15-20% of office visits and 25% of gynaecological operations. This proportion rises to 69% when the perimenopausal and postmenopausal age groups are considered.[3] Broad range of normal variations in menstrual bleeding causes difficulty at times in identifying abnormal pattern.

Abnormal uterine bleeding has a wide range of diagnostic possibilities. Goal of clinical management is primarily dependent upon attaining a correct etiological diagnosis. Diagnostic evaluation includes investigations ranging from CBC, hormonal assays, traditional dilatation & curettage; office based endometrial biopsy to pelvic ultrasonography for evaluation of endometrial/myometrial pathology contributing to the presentation.

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Diagnostic hysteroscopy for direct assessment of the uterine cavity has been a relatively recent armamentarium. It has ushered a new era in the evaluation of abnormal uterine bleeding and is accepted as the gold standard for determining the cause of endometrial pathologies presenting with the same.[4]Hysteroscopy allows direct visualisation of the uterine cavity and is used as an office technique in the evaluation of endometrial and endocervical disorders.

Recently transvaginal sonography (TVS) has permitted the use of higher frequency ultrasound waves at greater proximity to the uterus. It is relatively cheap, needs no anesthesia and being non-invasive and can be a first diagnostic step in evaluation of AUB.[5, 6] TVS has revolutionized gynecological ultrasound scanning & is considered a natural extension of the bimanual pelvic examination by many gynecologist. USG clearly depicts the uterine contour, echotexture and the status of ovaries but fails to provide adequate information regarding endometrium.

Office hysteroscopy allows an easy and safe examination of uterine cavity. It became practical with the introduction of small caliber endoscopes allowing their use in an office setting without the need for cervical dilatation. Powerful xenon light source allow excellent illumination coupled with light cords with visualization similar to USG. Minimum postoperative care is necessary for patients who undergo diagnostic hysteroscopy. This study has been taken up with the aim to analyze the place of hysteroscopy and TVS to evaluate abnormal uterine bleeding and to co-relate hysteroscopic with that of TVS findings which help in provisional/ final diagnosis.

MATERIAL AND METHODS: The present study was carried out in the department of Obstetrics and Gynecology, S.S. Medical College and associated Gandhi Memorial Hospital, Rewa (M.P.) in a period of 13 months from August 2012 to August 2013.

The patients were selected with complaint of abnormal uterine bleeding who were in reproductive, premenopausal and postmenopausal phase of life and were grouped similarly. 60 patients having complaint of AUB were taken up randomly for the study. After taking informed consent, a detailed history, general and systemic examination was done. All the patients underwent transvaginal sonography followed by hysteroscopy and further management was done according to the abnormality detected. A Prospective, comparative study was done.

Inclusion Criteria: Was married women beyond the age 20 with AUB, both parous and nulliparous women, patients who did not need any emergency management.

Exclusion Criteria: Was patients with Pregnancy, PID, patients with profuse bleeding, carcinoma cervix and coagulation disorders.

Blood grouping and Rh typing, complete blood count and ESR, random blood sugar/ fasting and post prandial levels, urine routine and microscopy, bleeding time and clotting time was done in all patients as basic investigation.

Transabdominal sonography followed by transvaginal sonography was done in all patients. The uterine anatomy and the adnexae were visualized using a 7.5 MHz vaginal probe transducer. The contour of the endometrial stripe was assessed in the midline sagittal plane and the point of maximum thickness of the stripe (ET) was measured on a frozen image at 1.5× magnification. The following criteria were adopted to express the sonographic results: normal cavity, endometrial thickening (>14mm for premenopausal and >=5mm for postmenopausal women) and endometrial atrophy (ET<4mm). Specific note was made of any focal lesion seen in terms of impression of an

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endometrial polyp, submucous fibroid, intramural fibroid, suspicion of hyperplasia or endometrial carcinoma.

Hysteroscopy was done on an out-patient basis using 4mm telescope. It was done in the postmenstrual phase as much as possible. 0.9% Normal Saline (1 litre) was used to distend the uterine cavity which was used in continuous flow. The patient was called on an empty stomach. Patients with empty bladder were taken in the operation theater. Procedure was done under sedation and with effect of local anesthesia. Tablet misoprostol 400 μgm was administered in some cases about 2 hours prior to the procedure for cervical priming excluding cases with history of asthma, heart disease, epilepsy and glaucoma.

The patient was placed in lithotomy position. Painting and draping was done. Uterus size was assessed by per vaginum examination. A uterine sound was then introduced in to the cervix to confirm the position of the uterus and measure the uterocervical length. Dilatation of the cervix with Hegar's dilators, done whenever required. The hysteroscope was then gently introduced into the cervix. Further advancement inside the cervical canal and uterine cavity was done under direct vision.

A systematic examination of cavity was performed starting from fundus of the uterus. To see the right ostium cable was kept on left side. The opposite ostium was visualized by turning the scope to 180 degrees. The fundus was visualized between the two ostia and the scope was withdrawn slowly to see all the four walls of the uterus. Internal os and cervical canal was seen by slowly withdrawing hysteroscope. After thorough inspection, endometrium biopsy was taken from appropriate place and the tissue was sent for histopathological examination. The patient was sent home after about four hours. A course of antibiotic for five days was prescribed. Patient advised for follow-up after seven days with histopathological report.

RESULTS: Results were analyzed, in present study maximum (41.66%) women belonged to age group of 31-40 years and then 23.33% in the age group of 41-50 years. Beyond the age group of 50 years were 16.66% and between 70-80 years 18.3%. Maximum number of the patients studied was from the rural area (71.7%). Literate women were 56.66%. In present study nearly half (45.0%) of the women belonged to low socioeconomic status, whereas 54% were from middle (41.7%) and upper socioeconomic strata (13.3%). Out of 60 patients, 60% belonged to reproductive age group 23.33% in premenopausal age and 16.7% in postmenopausal age group.

Distribution of patients according to menstrual abnormalities revealed menorrhagia in 45% metrorrhagia in 20% and postmenopausal bleeding in 16.6%. (Table –I)

Sl. No.	Menstrual abnormalities	No. of Cases	Percent (%)
1	Primary amenorrhea	1	1.7
2	Secondary amenorrhea	4	6.7
3	Oligomenorrhea	3	5.0
4	Menorrhagia	27	45.0
5	Metrorrhagia	12	20.0
6	Polymenorrhea	3	5.0
7	Post- menopausal bleeding	10	16.6
	Total	**60**	**100.0**

Table I: Distribution of patients according to menstrual abnormalities (n=60)

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Half of the patients were multipara, grand multi were 35%, 11.66% were nullipara and the rest 3.3% were primipara. In multipara and grandmulti maximum cases were of menorrhagia i.e. 46.7% and 52.3% whereas, metrorrhagia and secondary amenorrhea accounted for 20% and 28.5% cases respectively. Out of 7 nulliparous women, both menorrhagia and secondary amenorrhea contributed to 2 cases each. Significant medical history was found only in 13.3%, out of which 6.7% were hypertensive and 2 cases (3.3%) were of tuberculosis and diabetes each.

As per TVS findings maximum number of cases (35%) were diagnosed as normal followed by 13.3% cases each of endometrial hyperplasia and polyp and 11.7% of fibroid uterus. (Table - II)

Sl. No.	TVS finding No. %	Reproductive (n=36)		Pre-menop. (n=14)		Postmenop. (n=10)	
1	Normal (n=21) (35%)	13	36.1	4	28.6	4	40.0
2	Endometrial hyperplasia (n=8) (13.33)	4	11.1	1	7.1	3	30.0
3	Endometrial polyp (n=8) (13.33%)	4	11.1	3	21.4	1	10.0
4	Endometrial carcinoma (n=3) (5%)	-	0.0	1	7.1	2	20.0
5	Atrophic endomet. (n=1) (1.6%)	1	2.8		0.0	-	-
6	Adenomyosis (n=3) (5%)	2	5.6	1	7.1	-	-
7	Fibroid s/m (n=7) (11.7%)	4	11.1	3	21.4	-	-
8	IU CuTn=2) (3.3%)	2	5.6		0.0	-	-
9	RPOCs (n=2) (3.3%)	2	5.6	-	0.0	-	-
10	Ovarian cyst (n=1) (1.6%)	1	2.8	-	0.0	-	-
11	PCOS (n=1) (1.6%)	1	2.8	-	-	-	-
12	Bulky ut. (n=1) (1.6%)	1	2.8	1	7.1	-	-
13	Small ut. (n=1) (1.6%)	1	2.8	-	-	-	-

Table II: Distribution of TVS finding in reproductive, premenopausal and postmenopausal women

Out of 10 cases of postmenopausal bleeding, endometrial hyperplasia was the commonest (30%) pathology followed by carcinoma in 20%.

Hysteroscopic findings in AUB revealed maximum (23.3%) cases were of endometrial polyp, 16.7% hyperplasia, 15% fibroid, 5% endocervical polyp, 3.3 % endometrial carcinoma, intrauterine Cu-T, Ashermann's and TB endometrium each and 1 case each of adenomyosis and atrophic endometrium. In reproductive age group, maximum premenopausal age group cases were of endometrial polyp and in postmenopausal bleeding cases maximum (40%) was contributed to endometrial hyperplasia. (Table - III)

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Sl. No.	Hysteroscopy finding No. %	Reproductive (n=36)		Pre-menopausal (n=14)		Post-menopausal (n=10)	
1	Normal Endometrium (n=13) (21.7%)	6	16.7	6	42.9	1	10.0
2	Endometrial hyperplasia (n=10) (16.7%)	5	13.9	1	7.1	4	40.0
3	Endometrial polyp (n=14) (23.3%)	8	22.2	4	28.6	2	20.0
4	Endometrial carcinoma (n=2) (3.3%)	-	0.0	1	7.1	1	10.0
5	Atrophic Endometrium (n=1) (1.6%)	-	0.0	-	0.0	1	10.0
6	Endocervical polyp (n=3) (5%)	2	5.6	-	0.0	1	10.0
7	Submucosal fibroid (n=9) (15%)	7	19.4	2	14.3	-	
8	Adenomyosis (n=1) (1.6%)	1	2.8	-	0.0	-	-
9	Intrauterine Cu-T (n=2) (3.3%)	2	5.6	-	0.0	-	-
10	RPOCs (n=1) (1.6%)	1	2.8	-	0.0	-	-
11	Ashermann's (n=2) (3.3%)	2	5.6	-	0.0	-	-
12	Tubercular endometrium (n=2) (3.3%)	2	5.6		0.0		-
	TOTAL 60	**36**		**14**		**10**	

Table III: Study of hysteroscopic findings in AUB in various menstrual phases of life

Hysteroscopic and TVS findings compared during evaluation of 27 cases of menorrhagia, hysteroscopy diagnosed three cases as normal out of seven cases diagnosed normal by TVS. Nine cases 15% were diagnosed to have endometrial polyp by hysteroscopy whereas TVS diagnosed only five cases. By both TVS and hysteroscopy three cases of endometrial hyperplasia and one case of intrauterine CuT was found.

Hysteroscopy found seven cases of fibroid whereas TVS could visualize it in six cases. Adenomyosis and RPOCS were found in two cases by TVS but hysteroscopy found them only in one case. One case of bulky uterus was interpreted by hysteroscopy as normal.

In only case of primary amenorrhea, tubercular endometrium was diagnosed by hysteroscopy which was interpreted as small uterus by TVS.

In 25% cases of metrorrhagia, no pathology was detected by TVS and hysteroscopy. Most of the findings of TVS and hysteroscopy correlated in 16.6% cases of endometrial hyperplasia and endometrial polyp each, 8.3% cases of endometrial carcinoma and intrauterine CuT each. 16.7%

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cases were diagnosed as fibroid by hysteroscopy while TVS interpreted 8.3% as adenomyosis and fibroid each. Endocervical polyp seen on hysteroscopy was not diagnosed by TVS whereas hysteroscopy could not detect the finding of bulky uterus seen on TVS.

In four case of secondary amenorrhea no abnormality was detected by TVS in 75% cases and only in one case (25%) atrophic endometrium was seen. However on hysteroscopy only one case (25%) was interpreted as normal whereas in two cases (50%) ashermann's and in one case (25%) tubercular endometrium were found.

It was evident that all three cases (100%) of oligomenorrhoea were labeled as normal by hysteroscopy whereas by TVS only one case (33.3%) was normal and the others were PCOS (33.3%) and ovarian cyst (33.3%). All three cases of polymenorrhoea were diagnosed as normal (100%) by TVS whereas one case each of endometrial hyperplasia (33.3%), endometrial polyp (33.3%) and endocervical polyp (33.3%) were diagnosed by hysteroscopy.

Out of ten cases (16.8%) of postmenopausal bleeding, TVS diagnosed 30% as endometrial hyperplasia, 20% endometrial carcinoma, 10% endometrial polyp and the rest (40%) as normal. By hysteroscopy, endometrial hyperplasia was found to be 40%, endometrial polyp and endometrial carcinoma in 20% and 10% cases respectively. There was one case each of atrophic endometrium (10%) and endocervical polyp (10%) also.

Validity of hysteroscopy and TVS in various menstrual abnormalities as well as in individual pathologies seen by calculating sensitivity, specificity, positive predictive value and negative predictive value. (Table – IV, V)

	Sensitivity	**Specificity**	**PPV**	**NPV**
Menorrhagia				
Hysteroscopy	95.65%	100%	100%	80%
TVS	85.9%	100%	100%	57.1%
Metrorrhagia				
Hysteroscopy	90%	100%	100%	66.6%
TVS	90%	100%	100%	66.6%
Postmenopausal bleeding				
Hysteroscopy	100%	100%	100%	100%
TVS	66.6%	100%	100%	25%
Sec. amenorrhea				
Hysteroscopy	100%	100%	100%	100%
TVS	33.3%	100%	100%	25%

Table IV: Validity of hysteroscopy and TVS in various menstrual abnormalities

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	Sensitivity	Specificity	PPV	NPV
Endometrial polyp				
Hysteroscopy	100%	97.8%	92.8%	100%
TVS	46.1%	95.7%	75%	86.5%
Endometrial hyperplasia				
Hysteroscopy	100%	98.04%	90%	100%
TVS	55.5%	94.1%	62.5%	92.3%
S/m Fibroid				
Hysteroscopy	100%	100%	100%	100%
TVS	55.5%	96.08%	71.4%	92.4%
Adenomyosis				
Hysteroscopy	50%	100%	100%	98.3%
TVS	100%	98.2%	66.6%	100%
Endometrial carcinoma				
Hysteroscopy	66.6%	100%	100%	98.2%
TVS	100%	100%	100%	100%

Table V: Validity of hysteroscopy and TVS in individual pathologies

DISCUSSION: Office hysteroscopy was shown to be a simple safe, well tolerated and reliable procedure in the diagnosis of AUB across all age groups and its wide spread use can drastically reduce the need for conventional curettage, therapy increasing patient satisfaction and lowering costs.[7]

Transvaginal sonography (TVS) plays on important role as the initial modality for evaluation of AUB [8, 9] but its ability for screening the lesions with in the endometrial cavity is limited. The finding of a thickened central endometrial complex seen on TVS is often non-specific and may be caused by an endometrial polyp, submucosal fibroids, endometrial hyperplasia, carcinoma or cystic atrophy. Focal lesions are underdiagnosed at TVS because of limitations of the double layer thickness evaluation.[10, 11]

During the women's reproductive years, submucous myomas, endometrial hyperplasia detected and accounted for more than half of all findings. In postmenopausal women, hyperplasia, polyps and myomas were frequently found along with endometrial atrophy and carcinoma.

Endometrial polyps are common in both pre and postmenopausal women with endometrial thickening and most are asymptomatic. Small asymptomatic polyps may regress spontaneously while larger ones more likely to persist and be associated with intermenstrual or postmenopausal bleeding. Their frequency is increased in cases of endometrial carcinoma.

In a study of 1500 women with AUB to estimate the accuracy of hysteroscopy in predicting endometrial histopathology, hysteroscopy showed sensitivity, specificity, NPV, PPV of 94.2%, 88.8%, 96.3% and 83.1% respectively. It was concluded that the highest accuracy of hysteroscopy was in diagnosing endometrial polyps with sensitivity of 95.3%, specificity of 95.4%, PPV 98.9% and NPV

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81.7%, whereas the worth results were in estimating hyperplasia.[12] In a study by Sung-Joo Kim et al in cases of AUB found that for TVS, the sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy were 74.4%, 79%, 71.1%, 81.7%, 77.1%.[13]

The hysteroscopic signs of adenomyosis are not so diverse. The entrance of the diverticulae can be visualized provided the mucosa is not so thick, systematic scrutiny of the endometrial surface allows the hysteroscopist to determine the number and the shape of the orifices. They appear as bluish brownish spots staining the endometrial surface. Wang and Mecheatic[14] used hysteroscopy to evaluate 56 women with menorrhagia found that the sensitivity of using the cratered appearance on hysteroscopy to diagnose adenomyosis was about 75% which was described as good and comparable to that of ultrasound and the specificity was 42%.

Fibroids are the commonest gynecological pathology seen in reproductive and perimenopausal years, however, 50% of the fibroids are asymptomatic and do not need any treatment. Submucous myoma are diagnosed at USG by the presence of a nodular formation with well-defined margins, heterozygous structure and varying echogenicity, which displaced the endometrial lining.[15] Luigui Fadele et al compared TVS and hysteroscopy in diagnosis of submucous myomas. The concluded that mapping of uterine myomas was more precise with TVS than hysteroscopy but TVS cannot distinguish between endometrial polyp and submucous myomas.

Endometrial hyperplasia is defined as increased glandular to stromal tissue ratio more than one. Endometrial hyperplasia is an important cause of abnormal uterine bleeding with an incidence of 3.9%.[16] In a study of 980 women with abnormal uterine bleeding with hysteroscopy and D & C. Positive predictive value of hysteroscopy in the diagnosis of endometrial hyperplasia was 63%. Sensitivity and specificity of hysteroscopy was 98% and 95% respectively. Negative predictive value was 99%. PPV was higher in postmenopausal women compared to the women in the fertile age (72% vs. 58%).[17]

Endometrial biopsy and D & C are also reliable for diagnoses of endometrial carcinoma; hysteroscopy has an advantage of permitting a targeted biopsy in the event of localized lesions, reducing the possibility of false negatives. In addition it permits proper classification of the extent and degree of hyperplasia. At hysteroscopy appearance of endometrial carcinoma can vary from a flat sessile or pedunculated to irregular, polypoidal growth.[18]

Clark concluded a study on the accuracy of hysteroscopy in the diagnosis of endometrial cancer and hyperplasia. They concluded that diagnostic accuracy of hysteroscopy is high for endometrial cancer, but only moderate for endometrial diseases.[19] Transvaginal ultrasonography may reveal leiomyoma. Endometrial thickening or focal masses.

Although this imaging modality may miss endometrial polyps and submucous fibroids, it is highly sensitive for the detection of endometrial cancer (96%) and endometrial abnormality (92%).[20] Using a threshold endometrial thickness of 4mm Gull B[21] evaluated TVS for detection of endometrial carcinoma and obtained a sensitivity of 10% and specificity of 60% with PPV 25% and NPV 100%.

Postmenopausal bleeding describes the occurrence of vaginal bleeding following a woman's last menstrual cycle irrespective of the quantity of bleeding. Vaginal bleeding that occurs after 6 months of amenorrhea from presumed menopause should be considered abnormal and warrants investigation. Blind dilatation and curettage samples only 60% of the endometrium. Most focal lesions that will be obvious at hysteroscopy are missed by Blind D & C.[22]

The meta analysis of Smith- Bindmann et al[23] combined published data from different studies of TVS among 5892 women with postmenopausal women, found prevalence rates of 13% endometrial cancer and 40% hyperplasia and/or polyps. The balance between sensitivity and specificity is dependent on the endometrial thickness (ET) threshold based to define abnormal. If 3mm is used, sensitivity and specificity were 98% and 38% respectively but if 5mm was used the test characteristics were 92% and 82%. Tinelli K et al[24] concluded hysteroscopy is a significantly more accurate diagnostic method for the detection of endometrial pathologies than TVS, has better specificity and should be considered for all patients with an endometrial thickness of >4mm with postmenopausal bleeding.

On hysteroscopy, origin of the pedicle of endocervical polyp can be seen on a branch of arbor vitae. These polyps are typical because they are covered with a very rich net like vascular network which is very different from the endometrial polyp.

Hysteroscopy can be used to evaluate the extent and location of intrauterine adhesion as well as provide a means of treatment. Despite the usefulness of HSG as a screening method for patients suspected of having intrauterine adhesions, the final diagnosis is determined by direct visualization with hysteroscopy. Approximately 30% of abnormal hysterosalpingograms may be excluded or corrected by hysteroscopy.[25] transvaginal ultrasound alone, in the absence of saline infusion, has a low sensitivity in the diagnosis of Asherman's syndrome,[26] although it may be helpful in identifying residual areas of functional endometrium.

Use of transvaginal sonography to evaluate endometrial thickness prior to surgery may contribute significant prognostic value in cases of severe Asherman's syndrome, as patients with minimal endometrial thickness respond poorly to treatment.[27] Office hysteroscopy provides a useful diagnostic modality and is often used for second look hysteroscopy after treatment of intrauterine adhesions.

Three dimensional transvaginal sonography using multiplanar view has proven to be superior with full visualization of the complete extrauterine devices in about 95% of patients.[28] Hysteroscopic examination provides additional information concerning the situation of the IUD with missed filament not visible on the radiograph, the extend of displacement and possible embedment or fragmentation. Hysteroscopy can be applied to remove an IUCD under direct visualization if the sonographic removal fails.

Genital tuberculosis is common in India. A combination of clinical and endoscopic diagnosis along with endometrial histopathologic studies, acid fast bacilli culture and PCR assay provides the best available method of diagnosis of genital tuberculosis in infertile women. It is associated with fibrotic endometritis i.e. Netter's syndrome and its treatment is associated with low pregnancy rates unlike other forms of endometritis.

On hysteroscopy multiple thin flimsy adhesion and atrophic scarred endometrium is usually seen. In transvaginal sonography generally a small scarred uterus with scares endometrium is seen. Symonds M[29] also carried out a comparative study for TVS and hysteroscopy. He concluded that hysteroscopy is quick, convenient and more accurate; also biopsy if needed can be done at the same time so hysteroscopy is preferable to TVS.

CONCLUSION: Hysteroscopy is a valuable, simple, low risk technique which allows an adequate exploration of the uterine cavity under vision. In patients with abnormal uterine bleeding,

hysteroscopy provides the possibility of immediate diagnosis and prompt and effective treatment. The safety, ease of proficiency and ease of diagnosis, with diagnostic hysteroscopy has taken over much of a guess work out of clinical diagnosis.

It allows finding out the source of bleeding and perform a directed biopsy of the suspected area. It is an excellent tool in diagnosis of endometrial polyps, Submucous fibroids, endometrial hyperplasia and endocervical polyps. It is a very helpful technique in patients with intrauterine synechiae and foreign bodies. Since it can detect their presence, extension and nature, and these can also be removed under visual control with hysteroscope only.

Transvaginal sonography helps to form a provisional diagnosis which can be confirmed by hysteroscopy. Adnexal pathologies accounting for abnormal uterine bleeding can only be diagnosed by TVS. It is superior to hysteroscopy in diagnosis of adenomyosis, endometrial carcinoma.

Diagnostic hysteroscopy and transvaginal sonography are complimentary to each other in management of patients with abnormal uterine bleeding. Hysteroscopy offers an invaluable advantage of direct visualization of any abnormality within the uterine cavity. It does not substitute other diagnostic procedures, rather, it compliments them. So it can be concluded that hysteroscopy and TVS both are invaluable ornaments in the armamentarium of gynecologist.

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