SENSITIVITY OF TRANSVAGINAL ULTRASONOGRAPHY VERSUS CLINICAL AND OPERATIVE FINDINGS

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SUMMARY

Transvaginal sonography has provided the eyes to per vaginal examination and is a useful adjuvant to final diagnosis in gynaecological cases. Its sensitivity in gynaecological diagnosis is 85.45% as compared to 69.1% sensitivity of clinical diagnosis and is marginally less than 92.73% sensitivity of peroperative diagnosis. However cases of endometritis, endometriosis and adenomyosis can still be missed.

INTRODUCTION

Although the role and importance of sonography in modern obstetrics is undisputed, its role in evaluation of the patient with gynaecological disease is less clear. Transvaginal ultra-sonography (T.V.S.) is a powerful new technique that gives considerable information to the gynaecologist. Full blader is not required for this technique and it gives superior information to pelvic examination in obese patients.

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AIMS AND OBJECTIVES

The study was undertaken with following objectives.

(1) To do scanning by T.V.S. in the cases posted for abdominal hysterectomy for indications other than adnexal masses.

(2) To correlate the findings of T.V.S. with clinical, operative and histopathology report which was taken as gold standard.

MATERIAL AND METHOD

The study was carried out in 55 women admitted in the Gynaec Ward of L.N.J.P.N. Hospital. The patients were such, who were waiting for abdominal hysterectomy

without palpable adnexal pathology and were fit for surgery and anaesthesia.

After taking history; general, systemic and pelvic exmination was done to make clinical diagnosis. T.V.S. was done with 5 Mz vaginal probe sector scan phillips 1550 x p. With the patient supine and after covering the transducer probe completely with condom, the probe with jelly was inserted into the vagina and manipulated around the cervical lips and into the fornix so as to depict the structures of interest in best detail. When the transducer was oriented in the longitudinal or sagittal plane, the long axis of the uterus could usually be depicted by slight angulation off mid line. The uterus was used as landmark for depiction of other adnexal structures. Once the uterus was identified, the probe could be angled to the right or left of midline in the sagittal plane to depict the ovaries. After appropriate images were obtained in the sagittal plane, the transducer was turned 90o to show these structures in their axial or coronal plane. Findings on T.V.S. were noted.

At laparotomy, any abnormality in the uterus, tubes and ovaries and any associated pathology were noted. Gross macroscopic examination of the hysterectomy specimen was done to make the diagnosis. Specimen was then submitted for detailed histological examination and this acted as gold standard for comparsion.

OBSERVATIONS

Table I shows distribution of cases according to age. Maximum number of

Table - I
Distribution of patients according to age (n.55)

Age (years)	No. of cases	%
36-40	13	23.64
40-45	16	29.09
45-50	20	36.36
50-55	6	10.91

Table - II
Distribution of patients according to clinical diagnosis (n.55)

Diagnosis	No. of cases	%
Fibroid	25	43.45
D.U.B.	22	40.00
Adenomyosis	03	5.45
Endometriosis	01	1.82
Endometrial carcinoma	04	7.28

Table - III
Distribution of patients according to Histopathological diagnosis (n.55)

Diagnosis	No. of cases	%
Fibroid	32	58.18
Normal study	14	25.44
Adenomyosis	4	7.28
Endometriosis	1	1.82
Choriocarcinoma	1	1.82
Atrophic endometritis	2	3.64
Fibroscarcoma	1	1.82

Table - IV
Comparison of clinical, T.V.S., and Peroperative diagnosis, Histopathological diagnosis taken as gold standard

	Clinical	T.V.S.	Peroperative
Number with same diagnosis	38 (69. %)	47 (85.45%)	51 (92.73%)
Number with different diagnosis to Histopathology	17 (30.9%)	8 (14.55%)	4 (7.27%)

cases were in 45-50 years of age and average age at the time of hysterectomy was 44.34 years. Menorrhagia was present in 22 cases (40%) and 28 cases (50.9%) had two or more symptoms like menorrhagia with polymenorrhoea or pain in abdomen or inter-menstrual spotting. The commonest indications for hysterectomy were fibroid and D.U.B. Distribution of cases according to clinical diagnosis only (D and C not included) is shown in Table-II. Histopathological diagnosis after hysterectomy in these cases is shown in Table-III. In fourteen cases (25.44%) there was no pathology and were diagnosed as normal on histopathological examination. However, taking into consideration patients' symptomology, these were diagnosed as dysfunctional uterine bleeding cases. Comparison of clinical, T.V.S. and preoperative diagnosis with histopathological diagnosis is shown in Table-IV.

Forty seven cases (85.45%) had the same diagnosis on T.V.S. as the histopathological diagnosis and in 8 cases (14.55%) diagnosis was different, of the 8 cases with

different diagnosis, 2 cases with no abnormal findings reported on T.V.S., had atrophic endometritis, 1 case with normal study had adenomyosis. Of the two cases reported as carcinoma endometrium on sonography, one had fibrosarcoma and one had focal glandular hyperplasia on histopathology. Two cases of fibroids had associated endometrial polyp and one was missed on T.V.S. and three cases of fibroids had associated adenomyosis which was missed on T.V.S.

Overall sensitivity of T.V.S. (85.45%) is better than clinical method (69.1%).

DISCUSSION

T.V.S. as a screening tool in asymptomatic patients has not yet been evaluated. Most studies involving the use of U.S. as a screening technique have used 2-3-5 Mhz transducer and full bladder abdominal technique. Reeves et al in 1980 reported a 90% diagnostic accuracy by both pelvic examination and ultrasonography. He further stated that U.S.G. had a 56% false negative and 44% false +ve rate and concluded that preoperative U.S.G. evaluation of pelvic mass was not necessary. However, it must be recognised, both the limitations of equipment in 1970's and learning curve involved in the medical application of a new technique. The high false negative rate in this study probably reflects the limitation of imaging using 1.6-3.5 Mhz transducer and transabdominal full bladder technique.

Vilaro et al in 1987 reported increased diagnostic accuracy in 62% of cases with additional information obtained in 55% of cases by T.V.S. In present study also T.V.S. was more sensitive than the clinical examination. Considering the data of Andolf et al (1986) U.S. is almost four times more sensitive in detecting pathology in asymptomatic patient than was pelvic examination. Andolf and Jorgensen (1988) reported that U.S. was superior in overall performance and is useful compliment to pelvic examination. The study used 3.5 Mhz transducer and full bladder technique which is much less sensitive to T.V.S.

Mandelson et al in 1988 compared the image quality of transabdominal and T.V. Sonography in 200 patients in terms of resolution, contrast and anatomical detail. The use of T.V.S. for visualising the endometrium, myometrium and ovaries was superior in 85, 79 and 87% of images and equal in 10, 18 and 10% respectively. Additional diagnostic information was gained in 15 to 37% of patients with T.V.S., equal information in 60-84% and extra information in 1-3% cases by abdominal technique.

Leibman et al in 1988 compared Transabdominal and transvaginal U.S.G. in evaluating pelvic masses in 67 women and could gain more information and better delineation of internal architecture of the mass in 76% cases by T.V.S. Transabdominal approach did not provide more diagnostic information in any patient in their series.

T.V.S. is much more sensitive modality of diagnosis than just clinical examination and only marginally less than peroperative diagnosis. However, cases of endometritis, endometriosis and adenomyosis can still be missed even on T.V.S.

T.V.S. has provided the eyes to vaginal examination and is a useful adjuvent to final diagnosis.

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