ORIGINAL RESEARCH PAPER

Gynaecology

ROLE OF ULTRASONOGRAPHY IN THE EVALUATION OF GYNAECOLOGICAL ABDOMINO PELVIC MASSES

KEY WORDS:

Dr Vidyashri Kamath*	Assistant Professor, Dept of OBG, Father Muller Medical College, Mangalore *Corresponding Author
Dr Babitha Modi	PG Resident, Dept of OBG, Father Muller Medical College, Mangalore

INTRODUCTION

Sonography plays an important role in the evaluation of gynaecological disease. It is most commonly utilized in the evaluation of pelvic masses and fertility disorders. It affords precise delineation of the uterus and ovaries and of adnexal or intrauterine disorders. Specially, transvaginal sonography allows detailed evaluation of endometrial disorders. Although transvaginal sonography is best utilized as an adjunct to transabdominal sonography for pelvic masses, its use as a single modality has greatly expended the role of sonography in gynaecological disorders.

Although a spectrum of sonographic feature is associated with some pelvic masses, the information obtained by sonography, when coupled with the clinical and laboratory data, can be utilized to narrow the diagnostic choices to the most probable entities. In the majority of instances, the combined data leads to the most likely diagnostic consideration.

Aim and Objectives
- The aim of the study was to evaluate the diagnostic reliability of ultrasonography in various gynaecological abdomino-pelvic masses.
- Final diagnosis of the study was compared with the histopathological diagnosis.

Material and methods:
A prospective study of 50 patients with a variety of Gynecological Abdomino – pelvic masses attending the Out- Patient Department of Obsterics and Gynaecology at Father Muller Medical Collage , Mangalore between September 2016 to March 2017.

Inclusion Criteria
All non-pregnant females with Gynaecological Abdomino pelvic masses including premenopausal and postmenopausal females.

Exclusion Criteria
1. Pregnant females
2. Other surgical masses (not arising from the genital tract)

Methods
The detailed history and clinical examination of all patients was taken.Provisional clinical diagnosis was based on origin, position, number, surface, consistency and tenderness of the mass.

Ultransabdominal Ultrasonography was performed for all patients by Real time equipment. A 3.5 mHz. sector Scanner was used for most cases, a 3.5 mHz. Linear Scanner was used in some cases.Transvaginal sonography was done in a few patients.Thus total 50 patients were enrolled in the study who were fulfilling the inclusion criteria.

Various biochemical investigations were undertaken as per the performa along with Ultrasonography (Transabdominal/Transvaginal). After counseling and explaining the procedure to patient regarding the surgical intervention, a written informed consent was taken.Every patient was evaluated preoperatively for fitness to undergo surgery. All specimens were submitted for detailed Histopathological examination. The final diagnosis was concluded based on Histopathological Diagnosis. The comparison of various pelvic masses was done with Histopathological Diagnosis which was taken as Gold Standard. Finally, the

Ultrasonographic diagnosis was analyzed with regard to their true positivity, false positivity and false negativity by correlating them with final histopathological diagnosis.

RESULTS
Table 1: Distribution of patients according to age and parity

Variable		Frequency (50)
Age groups(years)	Upto 25	6%
	26 to 35	16%
	36 to 45	40%
	46 to 55	34%
	≥ 56	4%
Parity	Nulliparous	4%
	P1L1	36%
	P2L2	46%
	≥P3L3	14%

In the present study majority were belonging to age group of 36 to 55 years. It was seen that 96% cases were parous while just 4% were nulliparous.

Table 2: Distribution of patients according to diagnosis on ultrasonography

MASS TYPE		FREQUENCY (50)
UTERUS	FIBROID	38%
	ADENOMYOSIS	0%
OVARIAN	OVARIAN MASS	50%
	CHOCOLATE CYST	12%
	NORMAL	0

Ultrasonography suggested that there were 38% cases were fibroids. Among the adnexal structures; 12% chocolate cyst and 50% were diagnosed as ovarian masses.

Table 3: USG features of the gynaecological pelvic masses USG features

USG FEATURE		FREQUENCY (n-50)
UTERINE COMPONENT (19)	SOLID	2%
	CYSTIC	6%
	COMPLEX	34%
ADNEXAL COMPONENT (31)	Only SOLID	0
	CYSTIC	16%
	COMPLEX	42%
Free fluid		22%

Ultrasonography differentiated masses of uterine origin as having solid component (2%), cystic (6%) complex (34%). Similarly the adnexal masses were solid (0%), cystic (16%) and complex (42%). All adnexal mass were unilateral (62%).Minimum free fluid was detected in 22%.

Table 4: Histopathological diagnosis as gold standard

HPE FINDING		FREQUENCY(n-50)
UTERUS	FIBROID	42%
	ADENOMYOSIS	4%

OVARY	BENIGN	36%
	MALIGNANT	12%
	CHOCOLATE CYST	10%

Histopathological diagnosis was taken as final diagnosis. HPE reports found that the most common mass was fibroid (42%) and Benign ovarian tumors (36%). Other masses were Adenomyosis (4%), Chocolate cyst 10% and Malignant ovarian mass was 12%.

Table 5: Comparison of USG diagnosis to HPE diagnosis

Clinical Diagnosis		HPE		Sensitivity	Specificity	PPV	NPV
		Positive	Negative				
Fibroid	+	18	I	88%	96.6%	94.7%	90.3%
	-	3	28				
Adenomyosis	+	0	2				
	-						
Ovarian Mass	+	24	1	98.2%	98.5%	97.1%	100%
	-	5	20				
Chocolate Cyst	+	4	2	80%	97.9%	66.7%	98.9%YK
	-	1	43				

Ultasonographic Sensitivity of diagnosing was quite good for certain uterine and adnexal masses. Diagnostic sensitivity for fibroid was 85.7%, ovarian mass (benign and malignant) was100% and 80% forchocolate cyst.

DISCUSSION
In the present study majority of the belonging to age group of 36 to 55 years. It was seen that 94% cases were parous while just 6% were nulliparous. Nearly similar results were found by the study conducted by Abbasi et al (1) where the highest frequency of these patients was in the reproductive years and 60% were between 30-40 years in their study. It was observed that on Ultrasonography there were 38% cases of fibroid and 4% cases of adenomyosis. HPE reports found that the most common mass was ovarian(48%). Other masses were Adenomyosis (4%), Chocolate cyst 10%. Benign ovarian tumors were seen in 36% cases, Malignant ovarian mass in 12%. It was observed that out of the 50 cases in the study, the highest prevalence was found to be of ovarian tumors (48%). Present study undertook cases where the patient presented clinically with symptoms/signs of pelvic lumps. Ultrasonography was able to correctly detect 18 (36%) cases while 1 (2%) case was missed. 28 cases were correctly diagnosed as POSITIVE for fibroid and 3 cases were missed. The diagnostic sensitivity of fibroid is found to be 85.7% which is in accordance with the study of 84.9% by Alka Patil and Lavnya Anuranjani (2). On USG no case was diagnosed as adenomyosis, thus the sensitivity of USG in our study was 0%.

In the present study, there were 10% cases of chocolate cyst and all were found in the age group of 20 to 45 years. And USG gave 80% sensitivity in diagnosis. In the present study, 36% benign epithelial tumours and 12% malignant epithelial tumour of ovary were diagnosed on HPE. The sensitivity of diagnosing the ovarian masses on USG was100 % with specificity of 96.6%. Thus we could state that USG can be used effectively to rule out the ovarian masses. Diagnostic sensitivity was valuable for Fibroids (85.7%). Detection of ovarian malignancy was suggested based on presence of ascitis and solid component complexity of the mass. Even Andolf E et al(3) checked the reliability of Ultrasound against clinical examination and observed that ultrasound was superior to clinical examination in terms of sensitivity (83% and 67% respectively), whereas specificity was similar for both methods (96% and 94% respectively). Noor et al(4) concluded that Ultrasonography is more useful in detecting non-palpable or suspicious pelvic masses than the palpable pelvic masses. Ultrasound would seem to be superior in overall performance over clinical examination and a useful complement to palpatory exam but it may not be that helpful in those lesions which give an evident diagnosis on clinically examination itself. The increased reliance of gynaecologists on USG and other imaging techniques may be the cause of low diagnostic sensitivity of clinical examination.

CONCLUSION
We conclude that ultrasound can be used as an effective tool in diagnosing gynaecological pelvic masses. Ultrasonography can be more useful in detecting non-palpable or suspicious pelvic masses than the palpable pelvic masses.

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