A Diagnostic Study on Role of Usg in Ovarian Lesions

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ABSTRACT   *A Number of gray scale sonographic features have been studied for their ability to allow distinction between benign and malignant ovarian masses. Most investigators have found grey scale sonography to be as good as or better than Doppler to improve diagnostic sensitivity various scoring system have been proposed, but have important shortcomings. A study was carried out in the department of radio diagnosis, Gandhi General Hospital and its allied hospitals in Hyderabad. The study included patients of all age groups presenting with adfnexal masses. It was conducted from December, 2002 to may 2005. On ultrasound examination 45.7% (32 cases) of the ovarian lesions studied were having morphologically benign ultrasound appearance of simple cyst, thin wall and septations of < 3 mm or uniform low level echoes. On correlation with FNAC and histopathological appearance 93.7% of cases (30) were benign. In our study, the sensitivity predicting the nature of the lesion using the Morphological criteria on USG examination was 92.8%. The Specificity in our study was 71.4%. Thus in Present study sonomorphology has highest sensitivity of 92.8% and Negative Predictive Value 93.7%, which is comparable to other studies.*

INTRODUCTION

Ovarian lesions constitute an important problem in gynecological practice. The management of ovarian lesions remains a common problem with early and definite diagnosis forming the cornerstone of further management and determination of diseases.

A Number of gray scale sonographic features have been studied for their ability to allow distinction between benign and malignant ovarian masses. Most investigators have found grey scale sonography to be as good as or better than Doppler [1, 2, 3, 4] To improve diagnostic sensitivity various scoring system have been proposed, but have important shortcomings. [2, 3]

With this background in mind with conflicting reports available regarding the accuracy of Ultrasound in the diagnosis of ovarian malignancy, we under took this study to make our own assessment regarding the utility and efficacy of B-mode Ultrasonography for characterization of ovarian masses and their correlation with FNAC and histopathological findings.

MATERIALS AND METHODS

A study was carried out in the department of radio diagnosis, Gandhi General Hospital and its allied hospitals in Hyderabad. The study included patients of all age groups presenting with adfnexal masses. It was conducted from December, 2002 to may 2005.

The patients were included into the study based on the following criteria.

INCLUSION CRITERIA:
1. Patients who were referred for ultrasonography with palpable adnexal mass.
2. Patients in whom adnexal mass was incidentally detected on ultrasound examination.

EXCLUSION CRITERIA (AFTER SCAN)
1. Unilocular cystic masses less than 5 cm.
2. Masses which decreased in size or disappeared on follow up Eg: unilocular cysts.
3. Masses which extra ovarian in origin like uterine or broad ligament cyst etc.
4. Masses which turned out to be inflammatory in pathology (example: tubo-ovarian masses/abscess etc).
5. Patients who were lost to follow up and in whom adequate confirmation by pathology (Fine needle aspiration cytology-

FNAC,HPE, ascetic fluid analysis) was unavailable.

TOSHIBA – SONOLAYER – SSA – 250A and ALOKA-SSD-1000 real time ultrasound, scanner was used. Using a 3.5 MHz convex sector transducer we performed B mode ultrasonography through a trans-abdominal approach. Trans-vaginal ultrasound (TVUS) was performed using a 5& 6 MHz vaginal transducer.

Indications for TVUS included:
1. Uncertain findings on trans abdominal ultrasound (TAUDS),
2. Better characterization of some of the morphological findings.
3. To exclude ovarian pathology by demonstrating normal ovaries in obese patients.

Contraindications:
1. Virgin patients.
2. Patients who refused TVUS.

The examination was performed during the proliferative period of menstrual cycle in premenopusal women.

Several grey scale features were analyzed and results were recorded which included.

1. Unilateral or bilateral.
2. Site-right or left.
3. Size
4. Internal consistency
a. Predominantly cystic
b. Predominantly slid
c. Mixed (Cystic solid)
5. If not solid
a. Internal echoes – absent or present.
b. Papillary projections – absent or present.
c. Septations – absent or present; if presents
i. Thick(more than 3 mm) or
ii. Thin (less than 3 mm)
d. Solid components:
i. Septal nodule – absent or present
ii. Echogenecity – low or high.
6. Solid components:
a. Area of necrosis – absent or present.
b. Echogenecity – low or high.
7. Other features
a) Ascites

b) Matastatic deposits
i. Peritoneal.
ii. Liver
iii. Lymphadenopathy.
C. Pleural disease-absent or present.

Morphological indexing of the adnexal masses was done using the session score based on the visualization of inner wall structure and wall thickness, septae solid parts and echogenicity. A mass with score of 9 was classified as high risk mass (Suspicious of malignancy) FNAC was done for all cases showing seasons scoring < 9.

RESULTS AND DISCUSSION
The present study of comparing of 70 patients with age group 10-70 years shows a majority of (53%) of cases were in the age group 21-40 years i.e, in the reproductive age group. With increasing age, the incidence of ovarian lesions decreased.

On ultrasound examination 45.7% (32 cases) of the ovarian lesions studied were having morphologically benign ultrasound appearance of simple cyst, thin wall and septations of < 3 mm or uniform low level echoes. On correlation with FNAC and histo-pathological appearance 93.7% of cases (30) were benign, which correlated with study of Jain FA et al [5] where a sensitivity of 95% was reported.

Table – 1: Utility of USG in the diagnosis of ovarian lesions

STUDY	SENSITIV-ITY	SPECIFIC-ITY	PPV*	NPV#
Present	92.8	71.4	68.4	93.7
Benacerrat et al (1990)	80	87	73	91
Benacerrat et al (1994)	91	52	-	-
Stein et al (1995)	98	62	99	50
Madan et al (2004)	92.5%	96.8%	95.2%	92.8%

*PPV – Positive Predictive Value, #NPV – Negative Predictive Value

In our study, the sensitivity predicting the nature of the lesion using the Morphological criteria on USG examination was 92.8% which was comparable with the studies of Madan et al [6] (92.5%) and Stein et al [4] (98%) and Bromley et al [2] (91%)

The Specificity in our study was 71.4% which was comparable with Benacerra et al (87%) [8].

The PPV in our study was 68.4% which was comparable with Benacerra et al [8].

CONCLUSION
Thus in Present study sonomorphology has highest sensitivity of 92.8% and Negative Predictive Value 93.7%, which is comparable to other studies.

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