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Original Research

Usefulness of Ultrasonography in assessment of adnexal masses

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ABSTRACT:
Background: The present study was conducted to assess adnexal masses with Ultrasonography (USG).
Materials & Methods: 85 females diagnosed with adnexal masses were subjected to ultrasound scanning of the pelvic region. Ultrasonography findings were correlated with the final diagnosis. Ultrasonography was classified as diagnostic, contributory or erroneous lesions.
Results: Common lesions were benign ovarian neoplasm in 35, ectopic pregnancy in 20, functional ovarian cyst in 14, ovarian neoplasm in 10, endometriotic cyst in 4 and pelvic kidney in 2 cases. The difference was significant (P< 0.05). On USG benign ovarian neoplasm showed 2 contributory and 1 erroneous lesion, ectopic pregnancy as 1 contributory and 1 erroneous lesion, functional ovarian cyst as 2 contributory lesions and ovarian neoplasm as 1 erroneous, endometriotic cyst as 1 contributory.
Conclusion: USG found affective in assessment of adnexal masses in females.
Key words: Adnexal masses, Endometriotic cyst, Ultrasonography

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INTRODUCTION

Adnexal masses are lumps that occur in the adnexa of the uterus, which includes the uterus, ovaries, and fallopian tubes. They have several possible causes, which can be gynecological or nongynecological. Diagnosis of adnexal masses in a female patient presents diverse possibilities. These range from an ectopic pregnancy requiring immediate surgery to an ovarian malignancy or an inflammatory mass, requiring planned surgery or appropriate drug therapy.[1]

People report different symptoms, depending on the cause of the adnexal mass. People with an adnexal mass may report severe lower abdominal or pelvic pain that is usually on one side, abnormal bleeding from the uterus, pain during sexual intercourse, worsening pain during a period, painful periods and abnormally heavy bleeding during periods.[2]

Ultrasonography has been used as a diagnostic modality in this situation. Pelvic ultrasonography to visualize the adnexa and the uterus is commonly performed in symptomatic and asymptomatic women of reproductive and menopausal age. Although pelvic ultrasound is highly sensitive in detecting adnexal masses, its specificity in detecting malignancy is lower.[3] In addition, the differentiation between functional ovarian masses that will resolve over time and nonfunctional masses has tremendous implications for patients' counseling and management. Other types of adnexal

cysts are also important to diagnose correctly since they may affect patients' fertility, may be associated with significant pelvic disease, or put the patient at risk for ovarian torsion. Thus, the correct use of pelvic ultrasonography has become an integral part of the gynecologic evaluation and exam.[4] The present study was conducted to assess adnexal masses with Ultrasonography (USG).

MATERIALS & METHODS

The present study was conducted on 85 females diagnosed with adnexal masses in the department of gynaecology. All patients were made aware of the study and their consent was obtained. Ethical clearance was obtained before starting the study.

Data such as name, age etc. was recorded. A detailed physical examination was done. Investigation such as complete blood count was performed. All patients were subjected to ultrasound scanning of the pelvic region using Aloka SSD real time scanner with 3.5 and 5 mHz mechanical sector and 3.5 mHz linear transducers. Longitudinal and transverse scans of the pelvic organs were obtained. The diagnosis was confirmed by laparotomy. Histopathological examination of the tissue was performed. Ultrasonography findings were correlated with the final diagnosis. Ultrasonography provided a variable amount of information which was classified as diagnostic, contributory or erroneous as modified from Walsh et al. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Diagnosis of adnexal masses

Lesions	Number	P value
Benign ovarian neoplasm	35	0.01
Ectopic pregnancy	20	
Functional ovarian cyst	14	
Ovarian neoplasm	10	
Endometriotic cyst	4	
Pelvic kidney	2	

Table I, Graph I shows that common lesions were benign ovarian neoplasm in 35, ectopic pregnancy in 20, functional ovarian cyst in 14, ovarian neoplasm in 10, endometriotic cyst in 4 and pelvic kidney in 2 cases. The difference was significant (P< 0.05).

Graph I Diagnosis of adnexal masses

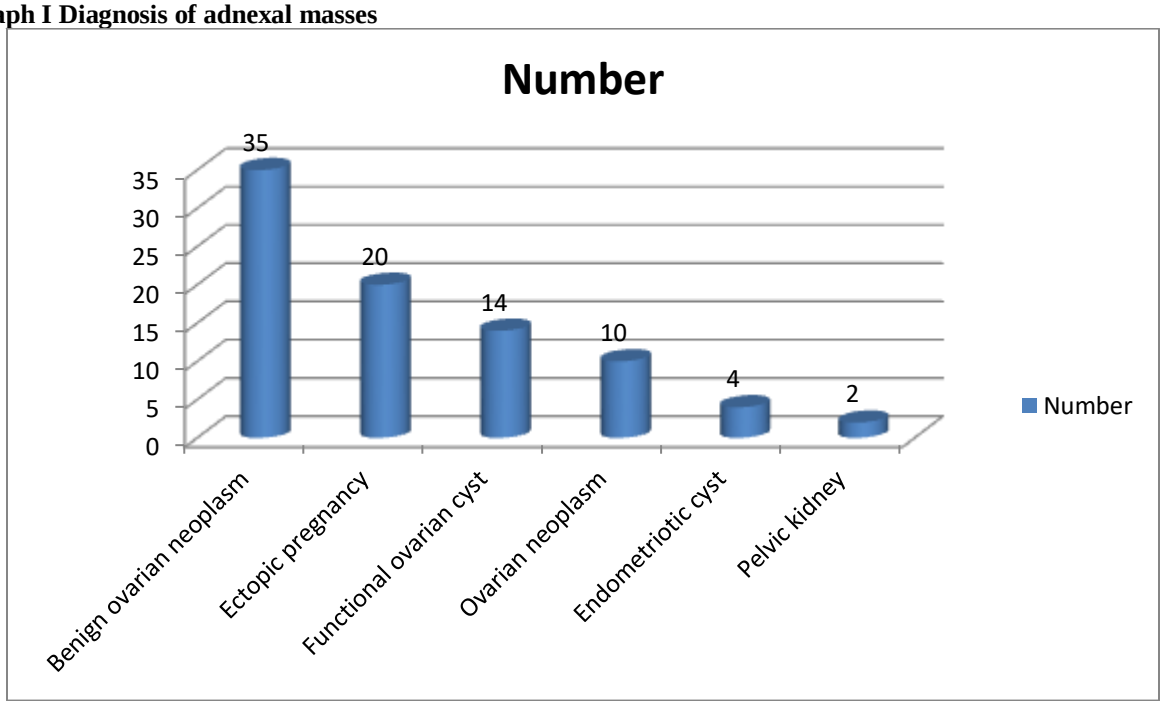
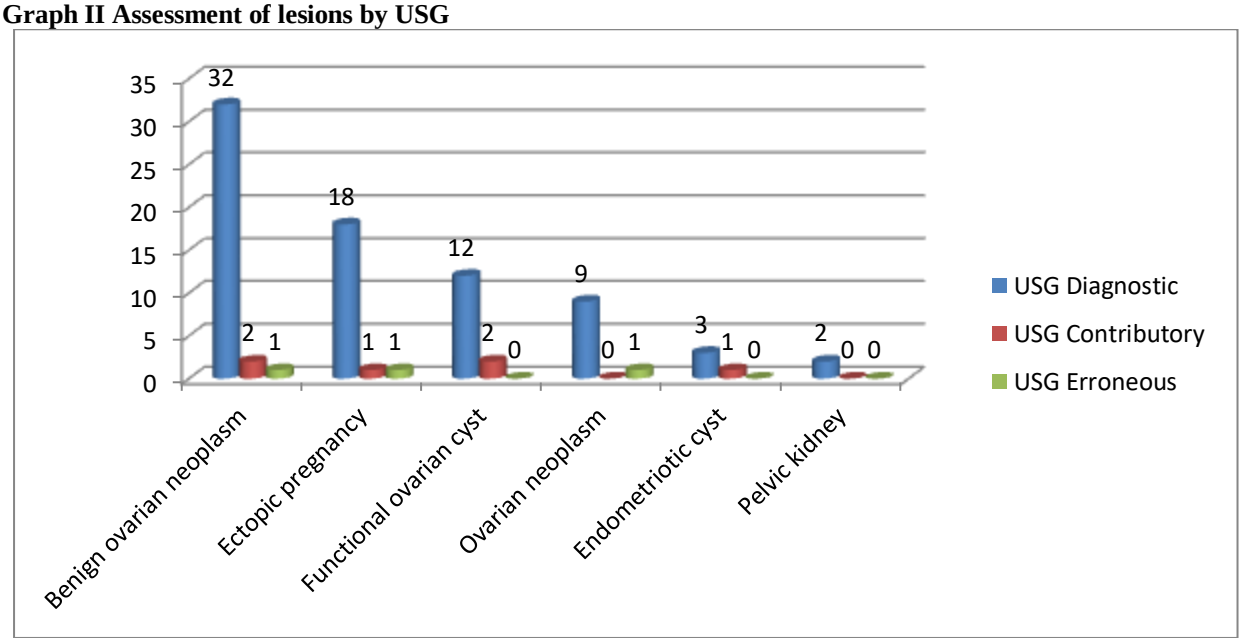


Table II Assessment of lesions by USG

Lesions	USG			Total
	Diagnostic	Contributory	Erroneous	
Benign ovarian neoplasm	32	2	1	35
Ectopic pregnancy	18	1	1	20
Functional ovarian cyst	12	2	0	14
Ovarian neoplasm	9	0	1	10
Endometriotic cyst	3	1	0	4
Pelvic kidney	2	0	0	2

Table II, graph II shows that on USG benign ovarian neoplasm showed 2 contributory and 1 erroneous lesion, ectopic pregnancy as 1 contributory and 1 erroneous lesion, functional ovarian cyst as 2 contributory lesions and ovarian neoplasm as 1 erroneous, endometriotic cyst as 1 contributory.

Graph II Assessment of lesions by USG



DISCUSSION

The clinical assessment of the patients undergoing evaluation for adnexal masses is of the utmost importance in guiding management: conservative follow-up with timed repeat scans versus surgical intervention.[5] The first clinical parameter to be considered is the patients' age: while adnexal cysts are the most common in reproductive-age women, the likelihood of malignancy in this age group is low, and a large proportion of cysts are of functional origin, tending to resolve over time. On the other hand, in postmenopausal women, the risk of malignancy and therefore clinical suspicion for malignancy are higher.[6] Other factors to consider when evaluating patients with adnexal masses are: symptoms of pelvic pain (which may point to adnexal torsion but also to endometriosis, pelvic inflammatory disease, or an acutely hemorrhagic corpus luteum cyst); abdominal distention accompanied by gastrointestinal complaints and weight loss (which may arise from an advanced ovarian malignancy); and use of hormonal contraception (which may affect the likelihood of functional ovarian cysts). In addition, personal or family history of breast and/or ovarian cancer as well as known carrier state for the BRCA 1 or 2 genes will likely direct clinical management towards a less conservative approach.[7] The present study was conducted to assess adnexal masses with Ultrasonography (USG).

In present study, common lesions were benign ovarian neoplasm in 35, ectopic pregnancy in 20, functional ovarian cyst in 14, ovarian neoplasm in 10, endometriotic cyst in 4 and pelvic kidney in 2 cases. Satoskar et al[8] in their study seventy patients with palpable adnexal masses were subjected to ultrasonographic examination. Three patients with negative ultrasound and no disease were excluded from

the final analysis. Correct diagnosis was obtained in 58.2% patients; contributory information in 16.4%. Ultrasonography is valuable in diagnosing functional and benign ovarian neoplasms. It is also useful in suspecting malignant ovarian neoplasms and confirming diagnosis of ectopic pregnancy, if correlated with the clinical findings.

We found that on USG benign ovarian neoplasm showed 2 contributory and 1 erroneous lesion, ectopic pregnancy as 1 contributory and 1 erroneous lesion, functional ovarian cyst as 2 contributory lesions and ovarian neoplasm as 1 erroneous, endometriotic cyst as 1 contributory. Meire et al[9] have described a 10.5% incidence of malignancy in unil-ocular tumours more than 5 cm in diameter. Multiloculation, thick septa and solid nodules are reliable indicators of malignancy on ultrasonography.

The addition of Doppler flow measurements to the gray-scale parameters described above may provide additional information in suspicious cases, and has been thought to increase the sensitivity, specificity, and positive predictive value of ultrasound in diagnosing ovarian malignancy.[10] This modality is used to detect abnormal blood vessels which arise from the neovascularization process induced by the malignant lesion. These blood vessels are characterized by abnormal blood flow patterns, typically low resistance to flow, which translates to abnormal pulsed Doppler parameters. However, despite initial interest in this feature, studies have failed to show a significant improvement in detection of malignancy over traditional morphological assessment.[11] The best approach to the correct diagnosis of malignancy now appears to be a combined assessment of gray scale morphologic features and color Doppler imaging. For example, color Doppler may reveal flow within solid areas of the mass, raising suspicion for malignancy. Nevertheless, there is probably a significant overlap between benign and malignant masses in terms of their Doppler flow features.[12]

CONCLUSION

Authors found that USG found affective in assessment of adnexal masses in females.

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