A Prospective Study on Reliability of Ultrasonography in Diagnosis of Gynaecologic Pelvic Mass in Tertiary Care Centre

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ABSTRACT

Background: Ultrasound is utilized to outline the size, consistency and structure of starting point of pelvic mass. The analysis of pelvic mass can be surmised in light of proper history and corroborative sonographic findings. Ultrasound gives information about function and morphology of abnormal organ when pelvic examination is difficult. Methods: This prospective study was conducted on 43 patients visiting the Gynaecology department to evaluate the diagnostic reliability of ultrasonography in various gynaecologic pelvic masses. Out of 43 patients, only 32 patients with a variety of gynaecologic pelvic masses completed the study during the 6-month period in Himalayan Institute of Medical Sciences, Dehradun. Results: 32 patients with a variety of gynaecologic pelvic masses were evaluated, in 18 patients the Sonographic diagnosis was thought to be confirmatory of Clinical disease and in 11 patients, it revealed the actual status of patients. In 3 patients, the diagnosis was characterized as misleading. Conclusion: Ultrasound is useful in defining symptomatic or palpable pelvis mass as showed above.

Key words: Pelvic mass, Sonography, Fibroid

INTRODUCTION

Over the previous decade propels in Radiological Technology with consequent presentation of imaging modalities changed the gynaecologic assessment of female pelvis.

The evolution of ultrasound through A-scanning, bitable scanning and static B scanning limited the use of gynaecologic ultrasound and it is with the advent of real time mechanical sector ultrasound that gynecologic ultrasound and ovarian scanning have become widely used in day to day practice.

Transvaginal sonography unquestionably provides excellent depiction of pelvic organs. A major disadvantage of transvaginal ultrasonography is that effective focal zone of transducer is shot, masses that are beyond the range of probe will not be clearly defined or will be missed completely. Ultrasonography has become an accepted part of modern Gynecological practice. Ultrasonography evaluation is an important adjuvant to clinical evaluation of gynecologic pelvic masses.

Therefore, Pelvic masses that are overlooked on physical examination or in the cases where physical examination is difficult, will be identified by Ultrasonographic examination. On the other side of the coin, the identification of small myomas, ovarian enlargement and physiological cysts may lead to increased patient concern and even operations that might be unnecessary.

METHODS

Total of 43 patients visiting the Gynaecology department suspected to have pelvic masses were enrolled in our study on the basis of inclusion and exclusion criteria. Out of 43 patients, only 32 patients with a variety of gynaecologic pelvic masses completed the study duration of 6-month in Himalayan Institute of Medical Sciences, Dehradun. The detailed clinical history was taken and general and local pelvic examination was performed for all patients with
various palpable pelvic masses on bimanual pelvic examination. Pelvic Ultrasonography was performed for all patients by real time equipment with 3.5 MHz transducer using transabdominal route as under. In order to have full bladder patient was asked to drink 2 liters of water one hour before examination and was advised not to empty her bladder until after scan was complete. The diagnosis established by sonographic evaluation was confirmatory, if clinical diagnosis was reaffirmed. If actual status of patient was established by sonography the interpretation was deemed to be diagnostic. If sonographic interpretation did not reveal the actual status of patient the diagnosis was classified as misleading.

RESULTS

The clinical diagnosis of various pelvic masses has been shown in Table 1. The characterization of sonographic diagnosis is shown in Table 2, from which it is evident that in eighteen patients (56.25%) the sonographic diagnosis was thought to be confirmatory of clinical disease and in eleven patients (34.37%) sonography revealed the actual status of patients. Sonographic in 9.37% (03) cases did not reveal the actual status of patient and were characterized as misleading.

DISCUSSION

In the present study, an attempt was made to evaluate the diagnostic accuracy of sonography in various gynaecologic pelvic masses. From the above results, it is clear that correct diagnosis was established in majority of the patients 90.67% and misleading in only 03 patients (9.37%). Which is lower than Voss Etal[7] who reported predictive value of ultrasound diagnosis of specific disorder as 97%, whereas predictive value of sonographic examination that showed no apparent abnormality as 40% only. Ronald Etal[8] confirmed the clinical diagnosis by ultrasound in 36.8% and sonography established the diagnosis in 59% of cases. Thus, reporting correct sonographic establishment of diagnosis by ultrasound is 56% in staging the tumors of cervix uterus.[9,10] Some authors found pelvic sonography and clinical examination to be equal in accuracy for determination of size, position of pelvic mass and superior in prediction of solid or cystic nature of such masses.

When the pregnancy test is found to be negative the most probable diagnosis of gynaecologic pelvic mass in young female is leimomyoma, ovarian cyst and endometriosis. In cases with positive pregnancy test or available BHCG result will rule out pregnancy complications like ectopic pregnancy.

Leiomyomas are the most common solid masses in pregnancy as shown by the previous studies, this is in accordance with the results of our study also. Fibroids are within the body of the uterus, but pedunculated and broad-ligament myomas can mimic an ovarian neoplasm. They appear on sonography as hypoechoic, round, persistent masses. Sonography is the mainstay of leimomyoma diagnosis.

Myomas may be demonstrated by distortion of bladder or uterine contour. Clustered bright echoes will suggest calcification and produce distal acoustic shadowing. It is difficult to distinguish myoma by ultrasound from sarcoma or other uterine neoplasm. Obstructed drainage leading to Haematometra is seen on ultrasound as a centrally cystic, round, moderately enlarged uterus. Charles Etal[11] reported that sonographically enlarged uterine cavity in postmenopausal women (upper limit of antero posterior diameter 3cm and length 8cm) is indicator of malignancy. They added that pelvic sonography is not screening test for uterine malignancy. The reported findings in postmenopausal uterus indicating malignancy are fluid filled obstructed uterus,[12,13] the enlarged uterine cavity,[14] the enlarged uterus and lobular uterus with mixed echo pattern.

The increased use of sonography in diagnostic evaluation of pelvic mass allows earlier diagnosis and better characterization of adnexal neoplasm. The experienced ultrasonographer can determine position, size and gross morphology of adnexal masses in almost every instance it is more difficult to determine exact tumor type Single or multiple clear cysts in only slightly enlarged ovary are probably physiologic. Benacercet Etal[15] reported a 73% positive predictive value for excluding adnexal masses and 91% negative predictive value for excluding malignancy. Mixed solid and cystic ovarian masses on Sonography makes it more likely to be malignant, especially if it is associated with ascites. One of common ovarian tumor with
mixed component is germ cell derivative, dermoid cyst, which contains bone, teeth, hair and sebaceous material. On real time the small vesicles and areas of haemorrhage are obvious with advent of real time sonography particularly with sector scanning, it become apparent that direct visualization of tubal pregnancy gestation sac outside the uterine cavity or rarely a definite extrauterine fetus could be visualized. According to Kimz et al,[16] the criteria for ectopic pregnancy include absence of intrauterine sac with serum BHCG of more than 1000 mg/l and an adnexal mass and free fluid in abdomen. According to Anthey and Hadlock,[17] sonography of female pelvis should not be expected to provide histologic diagnosis.

CONCLUSION
The results of our study revealed that it is stressed to improve the clinical diagnostic skill and learn to use ultrasonography as a secondary rather than primary diagnostic tool. Thus, ultrasound is useful in defining symptomatic or palpable pelvis mass as showed above.

REFERENCES