

A study of role of USG versus FNAC in the diagnosis of intraabdominal pathologies at tertiary care centre

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Abstract

Background: Intra abdominal lesions are frequently found in emergency medicine. These lesions are diagnosed with various radiological modalities. Distinction between malignant and nonmalignant lesions and particularly inflammatory lesions is vital for patient management. **Aim and objective:** To compare the role of USG versus FNAC in the diagnosis of intra abdominal pathologies at tertiary care centre. **Methodology:** Total 100 patients with intra abdominal lesions were studied. Data collected with pre tested questionnaire. All patients underwent USG and USG guided FNAC. Results of both the procedure were compared with Histopathological examination. Data analysed with appropriate statistical tests. **Results:** Mean age of the patient was 39.54 ± 2.5 years. Male to female ratio was 1.2:1. Liver was most commonly involved organ (36%) among all organs followed by ovaries (14%). In liver lesions most commonly seen was Hepatocellular carcinoma (14%). Sensitivity of FNAC was 93.33% and specificity was 100%. USG had sensitivity of 88.13% and specificity of 91.42%.

Key Word: intraabdominal pathology.

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INTRODUCTION

Intra abdominal lesions constitute major disease load in surgical and gynaecological patients. These lesions arrive from organs like liver, spleen, kidney, intestines, stomach, pancreas and ovaries. These lesions can be inflammatory, benign and malignant. A confirmed tissue diagnosis is essential for both treatment and staging of cancers. Single or multiple space occupying lesions can be demonstrated by Ultrasonography (USG), Computed tomography (CT) scan and Magnetic Resonant Imaging (MRI). Imaging techniques do not always distinguish between malignant

and benign lesions morphologically. USG is non invasive and economical OPD based procedure for diagnosis of intra abdominal lesions. Fine needle aspiration cytology is frequently used method of diagnosing neoplastic and inflammatory conditions of the abdomen. The FNA cytology was shown to be 100% specific for the diagnosis of malignancy ^{1,2} FNAC has advantages like low complication rate, it can be performed as out door procedure. it is a safer procedure in debilitated patients and patients with multiple lesions.³ Complications reported are hemorrhage, septicemia, biliary peritonitis, acute pancreatitis, and pneumothorax in FNAC when done blindly. Ultrasound guided fine needle aspiration biopsy is a rapid, accurate, economical and safe diagnostic procedure in which any structure visualized, can be reached quickly and precisely by a fine needle in any desired plane with constant visualization of the needle tip during insertion. Present study was conducted to compare the USG and FNAC in diagnosis of intraabdominal lesions at a tertiary care centre.

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METHODOLOGY

Present study was a prospective study carried out at a tertiary care centre. Study population included patients with intraabdominal lesions diagnosed clinically. Total 100 patients were studied during the study period.

Inclusion criteria: 1. Patients with intraabdominal lesions related to Intra-abdominal organs like liver, spleen, pancreas, stomach, gallbladder, the small and large intestines, the omentum, mesentery, the retroperitoneum, kidney, adrenals, lymph nodes, soft tissues and the ovary 2. Patients above 18 years Exclusion criteria : 1. Patients below 18 years 2. Patients with Parietal swellings arising from the skin and the abdominal wall, the uterus, the cervix, the prostate and bone 3. Patients with coagulopathy 4. Patients not willing to participate in the study.

Study was approved by ethical committee. A valid written consent was taken from the patients after explaining study to them.

Data was collected with pre tested questionnaire. Data included sociodemographic data, detailed clinical history and clinical examination of the patients. The patients are subjected to ultrasonographic evaluation to assess the origin of the mass and its relationship with the adjacent organs. Patients were divided clinically into palpable and non palpable lumps. Palpable lesions were subjected to direct aspiration and non palpable lesions needed USG guidance. puncture site was marked. A 22-23 G needle was used for superficial lesions and for deep seated lesions a lumbar puncture needle fitted with 10 ml syringe was used. Under aseptic precautions needle was introduced at the puncture site and aspiration was done under negative pressure. For deep seated lesions lumbar puncture needle was introduced immediately under radiological guidance and aspiration done. Adequate sample was taken by introducing needle two –three times. Sample taken on slides, air dried and stained with special stains according to lesions. The cases were analyzed, based on the cytological features. The smears were classified as inflammatory, benign, malignant, suspicious of malignancy and unsatisfactory for interpretation. Data was analysed with appropriate statistical tests.

RESULTS

Mean age of the patient was 39.54±2.5 years. Table one shows distribution of patients according to age and sex. Majority of the patients were in the age group of 31-40 years (28%) followed by 41-50 years (24%). Patients in the age group of 51-60 years contributed 22%. Patients above 70 years were 6 %. Out of 100 patients 55 were male and 45 were female. Male to female ratio was 1.2:1.

Figure 1 shows distribution of the patients according to organ involved in intra abdominal lesions. Liver was most

commonly involved organ (36%) among all organs followed by ovaries (14%). Gall bladder was involved in 12 % cases. Lymph node involvement was seen in 12 % cases. GI tract, pancreas and omentum were involved in 10%, 9% and 6% cases respectively.

In liver lesions most commonly seen was Hepatocellular carcinoma (14%). Other lesions were Hydatid cyst, Metastatic adenocarcinoma, Metastatic squamous cell carcinoma, Poorly differentiated carcinoma, Cholangiocarcinoma, Malignant lymphoma and Focal nodular hyperplasia. Gall bladder shows Poorly differentiated carcinoma (2%) and Adenosquamous carcinoma. Lymph node shows Granulomatous lesion suggestive of tuberculosis, Metastatic adenocarcinoma and Non-Hodgkin’s Lymphoma.

Gastrointestinal Tract lesions were Inflammatory- TB abscess (40%), Malignant tumour, adenocarcinoma. Ovarian lesions shows Serous cystadenocarcinoma and Mucinous cystadenocarcinoma. Pancreas shows Well-differentiated adenocarcinoma , Poorly-differentiated adenocarcinoma and Benign cystic neoplasm.

Table 2 and 3 shows comparison of FNAC and USG with HPE as gold standard. Sensitivity of FNAC was 93.33% and specificity was 100%. USG had sensitivity of 88.13% and specificity of 91.42%.

Table 1: Distribution of patients according to age group and sex

| Sr no | Age group | Male | Female | Total |
|-------|--------------|-----------|-----------|------------|
| 1 | 18-30 | 07 | 05 | 12 |
| 2 | 31-40 | 18 | 10 | 28 |
| 3 | 41-50 | 14 | 10 | 24 |
| 4 | 51-60 | 13 | 09 | 22 |
| 5 | 61-70 | 09 | 09 | 18 |
| 6 | >70 | 04 | 02 | 06 |
| | Total | 55 | 45 | 100 |

Table 2: Comparison of FNAC with HPE (histopathological examination) as gold standard in intra abdominal lesions

| FNAC | HPE | | Total |
|--------------|-----------|-----------|-----------|
| | Malignant | Benign | |
| Malignant | 56 | 00 | 56 |
| Benign | 04 | 36 | 40 |
| Total | 60 | 36 | 96 |

Sensitivity 93.33 %

Table 3: Comparison of USG with HPE (histopathological examination) as gold standard in intraabdominal lesions

| USG | HPE | | Total |
|--------------|-----------|-----------|-----------|
| | Malignant | Benign | |
| Malignant | 52 | 03 | 55 |
| Benign | 07 | 32 | 39 |
| Total | 59 | 35 | 94 |

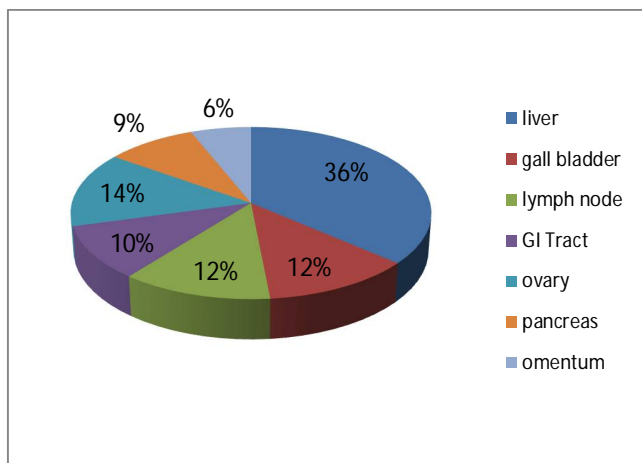


Figure 1: Distribution of patients according to organ involved

DISCUSSION

Mean age of the patient was 39.54 ± 2.5 years. Majority of the patients were in the age group of 31-40 years (28%) followed by 41-50 years (24%). Similar results were seen in Zawar MP., *et al*⁴ and Shamshad *et al*.⁵ In our study Male to female ratio was 1.2:1. Similar results were found in previous studies like Govind Krishna *et al*⁶, Aftab A Khan *et al*,⁷ and Ennis and Mac Erlean.⁸ In our study liver was most commonly involved organ (36%) among all organs followed by ovaries (14%). Gall bladder was involved in 12 % cases. Liver was most commonly involved in other studies like Sheikh *et al*⁹ and Adhikari RC *et al*¹⁰ Zawar M.P. *et al*.⁴ Liver was also the most common site of aspiration performed in the abdomen in a study done by J Nobrega *et al*.¹ Sensitivity of FNAC was 93.33% and specificity was 100%. USG had sensitivity of 88.13% and specificity of 91.42%. similarly, Shamshad Ahmed *et al*¹¹ 100% specificity and 94.11% sensitivity. In a study by Aftab Khan *et al*⁷ specificity and sensitivity of FNAC was 100% and 94% respectively.

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