



CYTO - HISTOPATHOLOGIC CORRELATION IN DIAGNOSIS OF INTRA-ABDOMINAL AND PELVIC LESIONS

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ABSTRACT

BACKGROUND: intra abdominal lesions are big challenge for clinician to treat a patient. In this situation histopathological evaluation plays important role in the diagnosis of intra abdominal and pelvic lesions. The documentary evidence of morphological nature of lesion is very important before the starting of therapy and prognosis is mandatory.

MATERIAL AND METHODS: This is an descriptive and cross sectional study carried over a period of 1 years from september 2017 to september 2018 at department of pathology ACS Medical College and Hospital, Chennai. The aim of this study was to determine the reliability of USG guided FNA in distinguishing neoplastic from non-neoplastic intra-abdominal and pelvic lesions. This study was approved by the institutional ethical committee. Results were analysed and interpreted statistically.

RESULTS: Total number of cases we received 50, most of the cases were presented at age group of between 50-60 years with MF ratio 1:1.3. There were 26(68.4%) malignant, 12(31.6%) were benign and 12(24%) were unsatisfactory smears. Liver is the organ most commonly involved, and most of the lesions were malignant. Hepatocellular carcinoma is most common malignancy is observed. Ovary is next common organ was involved. This study showed 96.6% sensitivity, 100% specificity, 94.4% diagnostic accuracy.

CONCLUSION: Intra abdominal FNAC is a simple, economical and a safe procedure with high rates of sensitivity, specificity and diagnostic accuracy. Correlation with clinical history, radiology and histopathology further increases the diagnostic accuracy. Early diagnosis helps in appropriate management of the patients.

KEYWORDS : Fine needle aspiration cytology (FNAC), Tru-Cut biopsy(TCB), Image guided cytology, liver, Hepatocellular carcinoma, Histopathology.

INTRODUCTION

Diagnosis of intra abdominal and pelvic lesions are always remains enigma for surgeon and as well as pathologist. A documentary evidence of the morphology of lesion is mandatory before institution of treatment and also for prognosis. In most of the cases, the diagnosis made by the FNAC and core needle biopsy place important role and it also substitute for surgical procedures like diagnostic laparotomy^{(1),(2)}. Most of the lesions are non-palpable and present with vague abdominal symptoms. If they are palpable, extent of lesion is not possible. So various radiological modalities like USG and CT used to guide for FNAC⁽³⁾. Most of the studies have shown it as a highly sensitive, specific and a cost effective diagnostic procedure. Histomorphological study remains gold standard and have an advantage of preservation of tissue architecture necessary for diagnosing and sub typing of tumors. Combined use of FNAC and Histomorphological examination are complementary diagnostic modalities in assessment of abdominal and pelvic lesions⁽⁴⁾.

MATERIALS & METHODS

This was an descriptive, cross sectional study over a period of one year from September 2017 to September 2018 referred to department of pathology at ACS Medical College and Hospital Chennai, Tamilnadu. A total 40 biopsies were analyzed. Demographic data regarding age, sex, chief complaints, clinical examination, radiological findings were obtained from MRD and FNAC and tru-cut biopsy have been done were retrieved from department of pathology. FNAC performed with 20 or 22G disposable lumbar puncture needle after obtaining proper informed consent. The sample was expelled onto slides, wet fixed with 95% alcohol and stained with hematoxylin-eosin (H&E).

Tru-cut biopsy was done by automated gun with an 18G needle, samples were fixed in 10% formalin, specimens were received were fixed in 10% formalin, grossing was done and tissues processed routinely and paraffin blocks were prepared. Sections were cut, stained with hematoxylin and eosin and examined under microscope for histomorphological examination. Cases were analyzed, based on cytological and histopathological features. The final diagnosis was provided with clinic-radiological correlation.

RESULTS:

Present study included material obtained from minimally invasive techniques in 50 cases during the study period. Which includes FNAC

from 13 patients and TCB biopsies from 10 patients. Excised specimen was available in 15 cases. Patient age ranged between 5 to 90 years, with mean age of 45. Out of these 21(42%) were males and 29(58%) were females with a sex ratio of 1:1.3. These patients presented with various clinical symptoms, most common was abdominal pain followed by mass, fever, jaundice, hematuria and constipation.

Analysis of organ/site wise distribution of abdominal lesions were done and majority of cases were from liver 13(34.2%) followed by ovary 10 (26.4%). Among liver lesions hepatocellular carcinoma most common lesion which shows male preponderance. Lymphoma, renal cell carcinoma were more common in males than in females. Pleomorphic sarcomas were common in females than in the males. Serous cystadenocarcinoma was most common malignant lesion in ovary, followed by one dysgerminoma, and metastatic adenocarcinoma. Majority of malignant lesions were seen in the age group of 40-60 years.

Histomorphological correlation and confirmation was available in 30(60%) cases, discordance seen in 8(16%) cases and cases were inadequate sample for reporting 12(24%).

Out of the 12 benign cases, 9 were confirmed by histopathological examination. All mucinous and serous cystadenomas which were diagnosed cytologically and were confirmed by the histopathologically, and except one serous cystadenoma out to be serous cystadenocarcinoma by histopathological examination.

21 cases were confirmed by the histologically out of the 26 malignant cases. All serous and mucinous cystadenocarcinomas of ovary, clear cell carcinoma of kidney, nephroblastoma, adenocarcinoma of gallbladder, adenocarcinoma of intestine, plomorphic liposarcoma and neuroendocrine carcinoma were confirmed by histologically. One case of papillary adenocarcinomatous deposits of lymphnodes which was diagnosed cytologically and confirmed by the histopathological study.

Except mild pain and discomfort in few cases, no serious complications were observed after both the procedures in our study.

Discussion:

Evaluation of abdominal and pelvic lesions is a big challenge in surgical practice. Differentiation between malignant and non

malignant lesions especially inflammatory is very important and pose difficulty for pathologist⁽⁴⁾.

Clinical presentation of malignant lesions can be misleading at times. Use of imaging techniques alone may fail to allow distinction between benign and malignant lesions on the basis of morphological features. Hence image guided minimally invasive techniques now gaining important, as a means of diagnosing of deep seated lesions in the abdomen and pelvic regions.

A clinic-morphological correlation of abdominal and pelvic lesions was done in 50 patients to assess the diagnostic efficacy of minimally invasive techniques. In our present study, M:F ratio of 1:1.3 was observed which was correlated with the study done by Shamshad et al⁽⁵⁾ and joao Nobrega et al⁽⁶⁾. The age incidence in our present study ranged from 5 to 90 years, with majority of cases being in the age group of 50-60 years (59.6%). The incidence of malignancy increased after the age of 50 years in males and after the age of 40 years in females with peak incidence between 40-60 years, which was comparable with study done by Zawar MP et al⁽⁷⁾, and Shamshad et al⁽⁵⁾.

Most common organ involved present study was liver, an observation which was correlated with the study done by Zawar M.P. et al⁽⁷⁾, and Birandar et al⁽⁸⁾. The next common site was observed in this present study Ovary but study was done by Zawar M.P. et al⁽⁷⁾. and Birandar et al⁽⁸⁾. observed large intestine was next common organ.

In this present study malignant lesions constituted the most common category which was observed with the study done by Birandar et al⁽⁸⁾. Aftab A. Khan et al⁽⁹⁾, and Shamshad et al⁽⁵⁾.

In the present study we reported 12(24%) cases were unsatisfactory sample to report, which was similar observation made by the Shamshad et al⁽⁵⁾. and Aftab A. Khan et al⁽⁹⁾. who observed 6.5% and 6% unsatisfactory smears, which is less than our present study.

The liver shows major site for malignant lesions in our study, as it also observed by Aftab A.Khan et al⁽⁹⁾, Steward et al⁽¹⁰⁾, Zawar MP et al⁽⁷⁾. Hepatocellular carcinoma most common lesion and shows male preponderance, this is accordance with previous literature. Malignant lesions of liver were observed at the age group between 40-60 years in accordance with observations reported by Shamshad et al⁽⁵⁾ and Zawar MP et al⁽⁹⁾. Ovary is next common organ is observed in present study but the study done by Shamshad et al⁽⁵⁾ and Joseph et al⁽¹¹⁾ gallbladder and pancreas are the common organ site for malignant lesions.

Few studies reported complications like mild local pain and bleeding from the needle track, many studies support the safety of FNAC. There was no complications, reported as a result of FNAC in this present study.

The sensitivity of USG guided FNAC was 96.6% which was comparable with many studies. All the studies observed 100% specificity as it was also observed in our present study also. The diagnostic accuracy is observed in our present study 94.4%, and many studies shows ranged from 83.9% to 100%, which is comparable with other studies.(Table : 5)

CONCLUSION:

Minimally invasive procedures like FNAC and core biopsy have high sensitivity and safe procedure for diagnosis, distinguishing benign from malignant intra-abdominal and pelvic lesions. Correlation with clinical history, radiology and histopathology further increases the diagnostic accuracy. Early diagnosis helps in appropriate management of the patients.

Fig No: 1a & 1b Neuroendocrine carcinoma H&E 40x

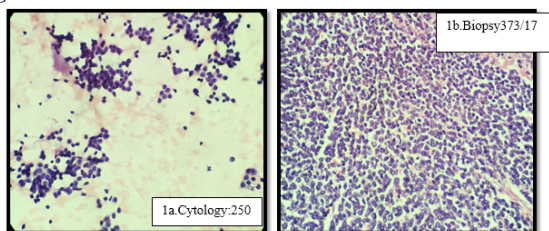


Fig No: 2a & 2b Pleomorphic liposarcoma H&E 40x

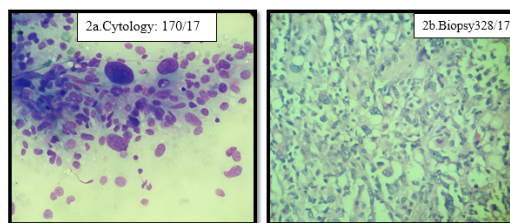


Fig No: 3a & 3b Gall bladder-well differentiated Adenocarcinoma H&E 40x

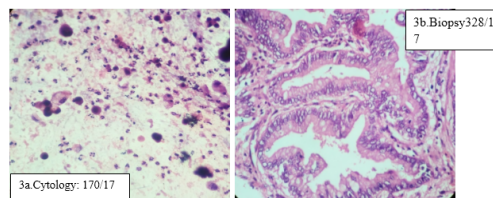


Table: 1 Type of sample and percentage

Type of procedure	No of cases	Percentage %
FNAC	13	26
TCB	10	20
Excised specimen	15	30
Inadequate sample	12	24
Total	50	100

Table : 2 Organ and Gender wise distribution of various lesions

Organ	Gender		Total
	M	F	
liver	9 (23.6%)	4(10.6%)	13
Ovary	0	10(26.4%)	10
Retroperitonium	3(7.9%)	1(2.6%)	4
Spleen	2(5.3%)	0	2
GIT	1(2.6%)	1(2.6%)	2
Lymphnode	1(2.6%)	1(2.6%)	2
kidney	1(2.6%)	3(7.9%)	4
Gallbladder	0	1(2.6%)	1
Total	17(44.7%)	21(55.3%)	38

Table : 3 FNAC and histopathological correlation of intraabdominal and pelvic lesions

Histological diagnosis	No of cases	FNAC diagnosis
Benign	12 (31.6%)	9
Malignant	26 (68.4%)	21
total	38	30

Table :4 Comparative analysis of lesions (on histology) and their corresponding cytological diagnosis

Organ	Correlated	Non-correlated	Total
liver	7	6	13
Ovary	10	0	10
Retroperitonium	4	0	4
Spleen	1	1	2
GIT	2	0	2
Lymphnode	1	1	2
kidney	4	0	4
Gallbladder	1	0	1
Total	30	8	38

Table : 5 Comparative analysis – statistical results

Measure of performance	Present study	Shamshad et al 2006	Sumana B.S. et al 2015(12)	Aparna et al 2015(13)
Sensitivity	96.6%	94.1%	95.35%	83%
Specificity	97.2%	100%	100%	88%
Diagnostic accuracy	94.4%	94%	96.43%	85%

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