ROLE OF ULTRA SOUND GUIDED FINE NEEDLE ASPIRATION CYTOLOGY (FNAC) IN OVARIAN MASS LESIONS

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Abstract

Introduction: Ovarian mass lesions are evaluated by ultrasound guided FNAC. It is useful to distinguish between neoplastic and non neoplastic ovarian masses.

Aim: The aim of the study is to study the cyto-morphological features of ovarian masses.

Materials and Methods: The present study is done over a period of two years i.e., from March 2017 to February 2019. A total number of 76 cases were studied in the Department of Pathology, Government Medical College, Kadapa. All the cases were categorised based on cyto-morphological features obtained ultra sound guided FNAC.

Requirement of materials: 10 ml disposable syringe with 22-25 G needle, suitable fixative is Isopropyl alcohol, Alcohol fixed slides were taken for Heamatoxyllin and Eosin (H&E) stain.

Results: In the present study we registered 76 cases. Among these 72 cases (94.73%) were primary tumors of ovary, two cases (2.63%) were secondaries and two cases (2.63%) were non neoplastic i.e., endometriosis of ovary.

Key Words: Ultrasound guided FNAC, Non neoplastic, Neoplastic ovarian lesions, Kadapa

Introduction:

The diagnosis of retroperitoneal lesions is one of the most difficult areas in surgical pathology. Various imaging modalities such as lymphography, fluoroscopy, and computerized tomography have been utilised in the evaluation of retroperitoneal masses. The advantages of ultrasonography (USG)-guided fine needle aspiration cytology (FNAC) are that it is rapid, inexpensive, versatile, does not require the injection of any contrast medium, and can be easily repeated when necessary.[1] FNAC appears to have a similar diagnostic accuracy in comparing benign and malignant neoplasms as open biopsy.[2]

There is clear association between the stages and prognosis of ovarian malignant tumors. Since two-thirds of epithelial ovarian cancer cases present at advanced stages and have a low 5-year survival rate, early evaluation of ovarian lesions is very important.[3,4]

MATERIALS AND METHODS:

The present study is done over a period of two years i.e., from March 2017 to February 2019. A total

number of 76 cases were studied in the Department of Pathology, Government Medical College, Kadapa. All the cases were categorised based on cyto-morphological features obtained ultra sound guided FNAC

Requirement of materials: 10 ml disposable syringe with 22-25 G needle, suitable fixative is Isopropyl alcohol, Alcohol fixed slides were taken for Heamatoxyllin and Eosin (H&E) stain.

RESULTS

In the present study we registered 76 cases. Among these 72 cases (94.73%) were primary tumours of ovary consisting of serous cyst adenoma of ovary – 32 cases (42.10%), Mucinous cyst adenoma of ovary – 10 cases (13.15%), Mature benign Teratoma – 2 cases (2.63%), Mucinous cyst adeno carcinoma -6 cases (7.89%), papillary serous cyst adeno carcinoma -22 cases (28.94%). Two cases (2.63%) were secondaries consisting of Krukenberg tumor and two cases (2.63%) were non neoplastic i.e., endometriosis of ovary.

Table 1: Distribution of ovarian lesions

Type of lesion	Number o f cases	Percentage of cases
NON NEOPLSTIC LESIONS		
Endometriosis of ovary	2	2.631%
BENIGN LESIONS		
Serous cyst adenoma of ovary	32	42.10%
Mucinous cyst adenoma of ovary	10	13.15%
Mature teratoma	2	2.631%
MALIGNAT LESIONS		
Papillary serous cyst adeno carcinoma	22	28.94%
Mucinous cyst adeno carcinoma	6	7.89%
SECONDARIES		
Krukenberg Tumor	2	2.63%
TOTAL	76	100%

Table 2: Age wise distribution of ovarian lesions

Age	Endometriosis of ovary	Serous cyst adenoma of ovary	Mucinous cyst adenoma of ovary	Dermoid cyst	Papillary serous cyst adeno carcinoma	Mucinous Cyst adeno carcinoma	Secondaries
0-10							
11-20	1			1			
21-30	1	7	4	1	18		
31-40		25	6		4	5	
41-50						1	
51-60							2
Total	2	32	10	2	22	6	2

Figure 1: 10x – Papillary serous cyst adenocarcinoma of ovary **Figure 2:** 40x- Papillary cyst adenocarcinoma **Figure 3:** Gross image - Papillary cyst adenoma of ovary **Figure 4:** 10x Papillary mucinous cyst adenoma of ovary

DISCUSSION

FNAC in gynaecological practice is used mainly in the investigation of recurrent and metastatic malignancies. In the present study we registered 76 cases. Among these, 72 cases (94.73%) were primary tumours of ovary consisting of serous cyst adenoma of ovary – 32 cases (42.10%), Mucinous cyst adenoma of ovary – 10 cases (13.15%), Mature benign Teratoma – 2 cases (2.63%), Mucinous cyst adeno carcinoma -6 cases (7.89%), papillary serous cyst adeno carcinoma -22 cases (28.94%). Two cases (2.63%) were secondaries consisting of Krukenberg tumor and two cases (2.63%) were non neoplastic i.e., endometriosis of ovary.

Khan *et al.* [5] studied 120 patients with ovarian masses and performed USG guided FNAC in 92 benign cases. FNAC and/or imprints of surgically resected ovarian masses were done in 28 clinically suspected malignant cases. The overall sensitivity, specificity and diagnostic accuracy of FNAC in diagnosis of various ovarian masses were 79.2%, 90.6% and 89.9%, respectively.

A study done by Anjali *et al* [6] reported 74 cases. The age range varied from 2 to 65 years, mean age being 42 years. In the pediatric age group, we found primitive germ cell tumor and a case of non-Hodgkin lymphoma involving ovary. Clinically, most of the patients presented with abdominal swelling and pain.

A study done by Dey *et al* [7] reported that, the accuracy of cytological diagnosis was greater for frank malignant lesions and for solid-cystic lesions compared to benign and pure cystic ones owing to paucicellularity and sampling errors.

Ultrasound guidance was very helpful in assessing the nature of lesions (solid, cystic or complex). Doppler facility helped in identifying and avoiding blood vessels and differentiating cellular from necrotic areas. FNAC was possible in all patients. FNAC had the following advantages: it was easy, simple, enables multiple passes within the pathological tissue, less hazardous, can be performed in patients with abnormal coagulation profile, can be done in patients with ascitis, no need for local anaesthesia, cheap, possible on both solid and cystic areas, negative pressure enables good cellular yields and the possibility of preparing cell blocks. [8]

There were no significant complications following FNAC of Ovarian lesions. So FNAC in ovarian tumours

is relatively safe procedure and accurate preoperative identification of nature of the tumour is also possible in majority of cases.

CONCLUSION

The present study shows neoplastic lesions comprised of 74 cases (97.36%) and non neoplastic cases were 2 cases (2.63%). Ultrasound guided FNAC can provide useful information in women during reproductive age group with functional cyst of ovary to prevent an unnecessary laprotomy procedure.

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