

# FINE NEEDLE ASPIRATION BIOPSY IN PELVIC TUMOURS

By

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## SUMMARY

Fine needle aspiration biopsy was carried out in 50 patients presenting with pelvic tumours. The sensitivity of the method for the detection of malignancy was 95.45% while the specificity was 90.90% and the accuracy rate for the typing of the lesion was 61.45%.

### Introduction

The ovarian tumour is an unsolved enigma that challenges the Gynaecologist today.

A palpable mass in the female pelvis is a common finding in gynaecologic practise. Unfortunately there is as yet no such screening programme for the early detection of ovarian tumour and so improve its therapeutic results.

Large scale use of aspiration biopsy may have had its origin in USA but the credit for developing this technique goes to Franzen Zajicek and their co-workers at the Deptt. of Cytology in the Karolinska Institute in Stockholm. Today fine needle aspiration biopsy has gained worldwide acceptance.

### Material and Methods

This prospective study of FNA biopsy cytology was conducted in Deptt. of Obst. and Gynaecology, Govt. Medical College, Nagpur on 50 cases presenting as pelvic masses. A complete general and

physical examination and a detailed pelvic examination was performed and a provisional diagnosis was made. Routine and other relevant investigations were done to arrive at the diagnosis.

The fine needle aspiration technique discussed by Franzen Zajicek (1974) was used. The routine of aspiration being trans-abdominal and vaginal.

The equipment consisted of:

1. Cameco Syringe Pistol
2. A disposable plastic syringe 10-20 ml.
3. Fine needle gauge 20-22
4. Glass slides 5.95% ethyl alcohol for fixation.

### Technique

The palpable mass was grasped firmly to steady it. It was cleaned with alcohol/spirit and the needle quickly introduced into the mass. Vacuum pressure was then applied to the syringe and the needle moved back and forth within the mass and in different directions. The needle was withdrawn after pressure allowed to equate and material obtained.

Smears were prepared and then fixed in 95% ethyl alcohol while still wet.

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Transvaginal aspiration was done or preferred in cystic tumours and tumours palpable on bimanual examination.

The smears were stained with papanicolou and H and E stain.

#### Observations

1. *Age:* In the 30 patients subjected to FNA biopsies. Age distribution showed that there were 5 patients below 15 years and 4 patients above 60 years.

2. *Complaint:* The commonest complaint was lump in abdomen in 24 patients.

3. *Parity wise distribution* showed that nulliparous formed a large group (12 patients), and multiparity was also present in 13 patients.

The distribution of patients according to clinical diagnosis to subjecting them to various procedures was ovarian tumours in 41 cases. Fibroid uterus in one case and doubtful pelvic masses in eight cases. The route employed for FNA was transabdominal in 41 cases and trans-

vaginal in 9 cases. In 37 cases out of the total 50 cases analysed, No Anaesthesia was employed.

After FNA further follow-up by tissue histology was undertaken in 37 cases, 10 cases were kept under clinical observation and 3 cases lost to follow-up.

The text table shows cell types identified on FNA.

TABLE II  
*Type of Cells Identified in Smears of FNA Biopsy*

Type of cell	Number
1. No cells	14
2. Malignant (not typed)	3
3. Adenocarcinoma	14
4. Benign epithelial lesion	7
5. Germ cells	3
6. Granulosa cells	1
7. Undifferentiated malignant	2
8. Benign epithelial lesion with microfilaria	1
9. Inflammatory cells	3
10. Teratoma	1
11. Mesoeptithelia cells	1

TABLE I  
*A Correlation of Gross Appearance of Aspirate and its Cytology are Shown*

Nature of Fluid	No.	* Positive Cytology			**Negative Cytology	
		No.	Ben.	Malig.		Inf.
Clear fluid	15	10	4	6	—	5
Hgic fluid	9	6	2	4	—	3
Turbid fluid	5	3	1	1	1	2
Semisolid (Small in amount)	21	17	2	14	1	4
	50	36 (72%)	9	25	2	14 (28%)

(\*) Positive cytology refers to those cases in which diagnosis would be made on basis of aspiration biopsy.

(\*\*) Negative cytology refers to those cases in which no diagnosis could be made on cytology because of inadequate samples, absence of cells or technical or human error. Out of 50 aspiration biopsies a positive cytology was obtained in 36 or 72% of cases while in 14 (28%) no positive diagnosis was made. This table also shows that the semisolid aspirate yields a positive cytology Out of 21 cases, cytologic diagnosis was possible in 17 (80.95%) cases and the cytology in the 14 out of 17 was malignant.

Table III shows correlation between FNA cytology and histopathology or final clinical diagnosis.

There was one false -ve case (an adenocarcinoma of border line malignancy). Therefore, false negativity was 4.54%. There was one false +ve case in a case of tuberculosis on histopathology reported as malignant teratoma on cytology. Therefore, false positivity was 9.09%.

A comparison of cytology FNA smears with histopathological and clinical behaviour in Table IV.

Out of 22 cases diagnosed as malignant on FNA, 21 were proved by histological or clinical diagnosis.

Therefore, sensitivity of aspiration biopsy was 95.45%. Out of 11 cases diagnosed as benign by aspiration biopsy, 10 proved to be benign on histopathology.

Therefore, specificity of aspiration biopsy was 90.90%.

The accuracy of FNA typing the lesion is shown in Table V below.

Typing was attempted in 26 cases. But only 18 of these were followed up by the histopathology and these were used to study the accuracy of typing the lesions.

Important finding was that out of the 8 cases diagnosed as being benign epithelial lesion, 3 were leiomyoma, 1 was endometriosis, 2 were proved benign epithelial tumours, 1 was a teratoma and 1 was border line adenocarcinoma. So benign conditions were diagnosed in 6 out of 8 cases.

The accuracy rate for detection of malignancy in present study was compared with other studies and compared excellently.

Therefore, the study as amply demonstrated that aspiration biopsy is highly sensitive and specific good in the diagnosis of pelvic tumours. It is quick, simple, atraumatic. Patient compliance is high. It is invaluable because it can avoid much of the morbidity and possible mortality associated with surgery.

TABLE III  
Shows Correlation Between FNA Cytology and Histopathology or Final Clinical Diagnosis

Tytology	Total number	Histological or clinical diagnosis		
		Ben.	Mal.	Inf.
Benign	8	7	1 (false -ve)	0
Malignant	22	0	21	1 (false +ve)
Inflammatory	3	0	0	3
Inadequate	14	10	3	1
		17	25	5

TABLE IV

FNA	Total No.	Histology or Clinical	
		Benign	Malignant
Benign	11	10	1
Malignant	22	1	21

TABLE V

Lesion	Histopathology	Aspiration biopsy	accuracy
Benign epithelial	2	2	100
Adenocarcinoma	6	5	83.33
Teratoma	1	0	0
Germ cell tumour	3	3	100
Granular cell tumour	1	1	100
Fibroid	3	0	0
Endometriosis	1	0	0
Tuberculosis	1	1	100
Total	18	11	61.11

Author/Study	No. of cases	% accuracy
Kjallgren <i>et al</i> 1977	80	90.95
Kjellgren <i>et al</i> 1979	109	96
Mordquist <i>et al</i> 1979	74	94
Kjellgren <i>et al</i> 1982	236	94
Sandhu <i>et al</i> 1984	25	96
Moriarty <i>et al</i> 1986	371	91
Present Study 1986	50	95.45

It is inexpensive and Kaminsky (1984) has calculated that aspiration biopsy is 80-90% cheaper than formal open biopsy. Thereby making the fiscal dimension of aspiration biopsy an attractive feature to a developing country like ours.

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