

In present study most of cases were in negative for malignancy category with 72% on CS while 74% on CB similar findings were seen in study done by Sujathan et al⁸. In suspicious for malignancy less no. of cases encountered on CB(8%), and positive for malignancy maximum no of cases were diagnosed on CB (18%). Similar findings were also noted by Takagi et al¹⁴, Sujathan et al⁸, Bodel et al³, Khan et al¹⁵, and shivkumarswami et al⁷.

In the present study diagnostic yield for malignancy was significantly increased by cell block method. The present study identified additional 6.33%

(9 cases) malignant lesions by cell block method when compared to conventional smear. Additional diagnostic yield was noted in various studies. In study done by Bodele et al, additional 7% (10 cases) of malignant lesions were identified by cellblock method³. Dekkar and Bupp et al study, reported that samples obtained by combined cellblock method and smear technique for malignant lesions were double to that of conventional smear technique only. By using cellblock method tumors were subsequently demonstrated in 38% of the patient who had negative or atypical cytological reports².

In a study done by Khan et al, additional findings were diagnostic in 16% of malignant cases¹⁵. Additional 18 cases for malignant lesions were diagnosed by cellblock method in study done by Takagi F¹⁴. Khan et al¹⁵, in another study titled as usefulness of cellblock verses smears in malignant effusion cases reported that the recovery rate for malignant lesions by cellblock preparation was 20% greater than that obtained for specimen examined in smear only¹⁵.

Table 8: Additional yield of malignancy in various studies by cell block

Sl. No	Study	(%)
1	Dekker and Bupp et al ²	38
2	Khan et al ¹⁵	20
3	Shivkumarswami et al ⁷	15%
4	Bodele et al ³	7
5	Richardson et al ¹⁶	5
6	Present study	6.33%

According to various studies additional diagnostic yield for malignancy was noted if conventional smear technique is supplemented by cellblock method.^{1,2,13} In present study, by using cell block method we diagnosed malignant lesions in 21% of samples, where as in conventional smear method diagnosis for malignant lesion was 15% only. In present study identification of primary site was done in 100% cases. In study done by Khan et al.¹⁵ could identify primary site in 81.3% while Thaper et al⁴ identified the same in 83.3% cases. Clinic-radiological correlation along with immunomarkers for identification of primary site helped to confirm primary site in present study. In present study sensitivity, specificity, PPV, and NPV for CS was 61-79%, 87-100%, 67-100%, 89-93% respectively, and for CB 73-88%, 94-100%, 83-100 and 82-96% and CB with IHC 88%, 100%, 100%, and 97% respectively.

Table 26: Accuracy in different studies in CS and CB

Study	CS	CB
Thaper et al ⁴	71.42%	85.72%
Zemansky et al ¹⁷	-	90%
Ceelen ¹⁸	71%	89%
Present study	85-90%	97%

In present study accuracy of CB was 97%, increase accuracy also noted by Thaper et al.⁴ (85%), and Ceelen et al¹⁸ (89%) zemansky et al¹⁷.

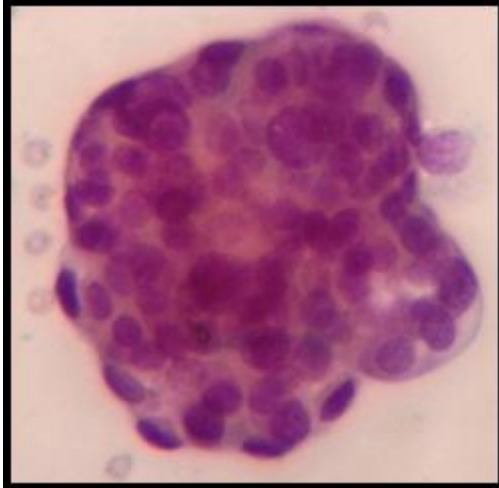
7. Conclusion

Cell block technique is simple and reproducible and uses routine laboratory reagents and processing. In cell block technique more amount of sample is required for obtaining proper cell button. Cell block technique offers advantage like it concentrates all the cellular material and increases cellular yield. Though cell block show preservation of architectural pattern. yet cellular morphology can be better appreciated on conventional smears. Use of cell block technique eliminated the suspicious for malignancy category giving more definitive diagnosis and shows additional increase in diagnostic yield. In cell block technique multiple sections of the same material can be processed for immunohistochemistry that help to identify primary site of origin in malignant fluids in 100% cases.

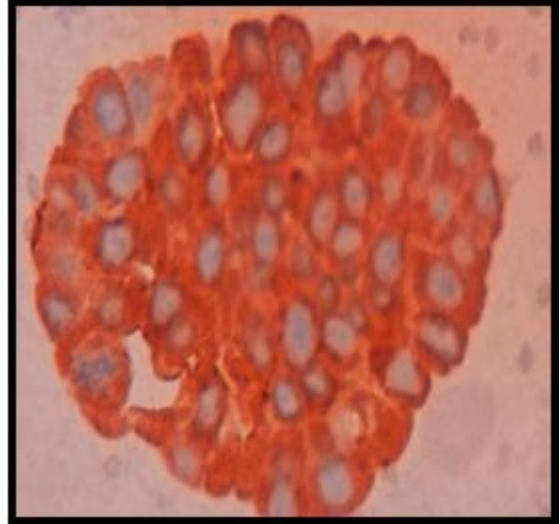
Combined approach cell block in conjunction with conventional smear can should be used in suspicious for malignancy cases. Positive results, identification of primary site in malignant effusions and further typing will have an oblivious influence on patient management. Though cell block technique is time consuming causes delay in issuing report. It is balanced by its ability to increase sensitivity and accuracy of final diagnosis

References

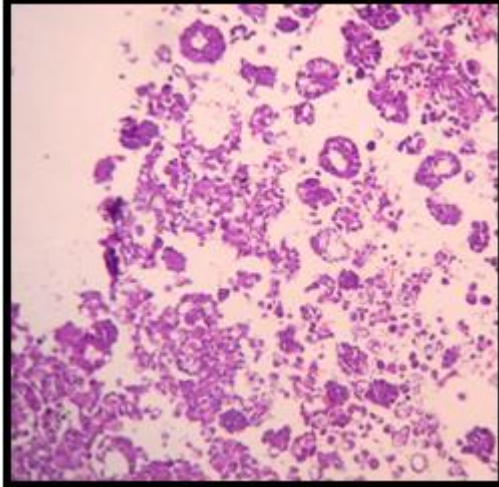
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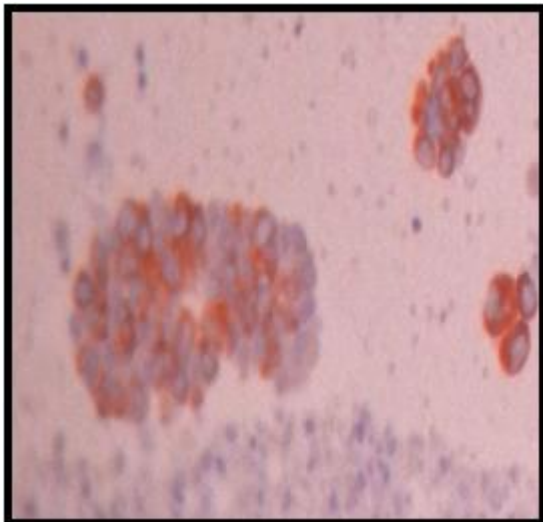
Photomicrograph 16: cell ball on CS 400X, PAP



Photomicrograph ; showing Mammoglobin + on cell block,
IHC 400X
Case of Metastatic adenocarcinoma – primary site Breast



Photomicrograph 17: Showing acinii, cell balls malignant
scattered singal cell population (100X, H&E)



Photomicrograph :showing Cytokeratin 7+ on cell block,
IHC – 100X