IMPRINT CYTOLOGY OF LYMPH NODES*

Pages with reference to book, From 266 To 267

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Abstract

Imprints or touch preparations were prepared from lymph nodes in 57 cases. Comparison with histological sections showed a high degree of accuracy (94.7%) in diagnosis. They are simple to prepare and no special equipment is needed. They can be a useful adjunct to histologic sections after surgery (JPMA 30:266, 1980).

Introduction

Imprints or touch preparation of lymph nodes have been used for many years as an adjunct to routine histologic sections. In 1927 Dudgeon and Patrick first described the use of cellular preparations made by scraping fresh tissue. With this method Dudgeon and Barret (1934) studied a large number of tumours and concluded that an accurate identification was possible.
This study was carried out to evaluate the usefulness of imprints as an adjunct to histologic sections in surgically removed lymph nodes.

Material and Methods

Imprints were preparad from the unfixed, fresh lymph nodes in 57 cases. The lymph nodes were cut into two halves with a sharp scalpel. One half was firmly held between index finger and thumb so that it protruded slightly beyond the finger tips. It was then pressed firmly onto clean slides held in other hand. Care was taken not to make any lateral or sliding movements. In this manner a series of imprints were prepared similar to pressing a stamp onto a paper. Sometimes the first imprints contained excess of tissue fluid and blood but it was found that subsequent imprints gave better cytological results. Two imprints were fixed in 95% ethyl alcohol for 30 minutes while two slides were fixed in 100% methyl alcohol. Another slide was air-dried. Histologic sections were available in all cases for comparisons. Modified Papanicolaou's stain, Giemsa stain, Acid fast Kinyoun stain and Methyl green thionine stain were employed in all cases side by side.

Results and Observations

Results of imprint cytology of lymph nodes are shown in table-I.

Table I: Results of Imprint Cytology of Lymph Nodes

Total cases	His Dx	MALIGNANCY — CYTOLOGICAL DX						Accuracy of Cytological Dx
		Total	True Positive	False Pos. No.	False Pos. %	False Neg. No.	False Neg. %	
*57	15	16	14	2/42	4.8	1/15	6.7	94.7%

Sensitivity--93.3%

Specificity--95.2%

Abbreviations: Dx: Diagnosis, His: Histological, Neg: Negative No: Number, Pos: Positive

*This series does not include those 2 cases in which imprints could not be prepared.

Out of 57 cases malignancy was diagnosed in 14 cases on imprints cytology. There was one (6%) false negative case. Two false positive cases were also diagnosed representing 4.8% of non-malignant cases. The accuracy of cytological diagnosis was 94.7%. The sensitivity of the test was 93.3% while the specificity was 95.2%.

Correlation of imprints and histological diagnosis is shown in table-II.

Table II: Correlation of Imprints and Histological Diagnosis

Imprint Diagnosis	HISTOLOGICAL DIAGNOSIS				
	Non-specific Inflammation	Tuberculosis	Non-Hodgkin Lymphoma	Hodgkin's Disease	Metastatic Carcinoma
Normal	14	10	—	—	1
Necrosis	5	11	—	—	—
Non-Hodgkin's Lymphoma	—	—	5	—	—
Hodgkin's Disease	—	—	—	4	—
Metastatic Carcinoma	2	—	—	—	5
Not Prepared	1	—	—	1	—
Total:	22	21	5	5	6
Grand Total:	59				

No attempt was made to classify the benign lesions. All 5 cases of Non-Hodgkin's lymphomas were correctly diagnosed. Metastatic carcinoma was correctly diagnosed in 5 cases. There was one false negative case here. As irregular fragments of tissue were removed by surgery and imprints could not be prepared properly so a negative diagnosis was made here. There were two false positive cases.

Discussion

In cases where surgical biopsy has been performed imprints can be prepared at no added cost. They are simple to prepare only equipment needed is clean glass slides.

The results tabulated in this series show a high degree of accuracy (94%) of diagnosis of tumours by imprint method. Ultmann et al (1958) described an accuracy of 96% of diagnosis by imprints in their series. Thus, the diagnosis of tumour by imprints compares well with histologic sections. They may be employed as an important adjunct to histologic sections. The other advantage is that cytologic preparations can be fixed and stained in much shorter time and thus, a cytological diagnosis can be made before histological sections are ready for study. They can add considerable information regarding cell type thereby aiding in subtyping of lymphomas. Tribe (1965) used imprints in breast tumours with high accuracy (95%). He suggested that imprints have a definite place if used in combination with

frozen sections. The imprints can also help a beginner in the field of fine needle aspiration biopsy to familiarise himself with the cytology of an organ and to learn interpretation of the aspiration smears. In conclusion, our experience with imprints of lymph nodes shows a high degree of accuracy of diagnosis especially for malignant involvement of lymph node. Imprints have certainly a place as an adjunct to histologic sections in diseases of lymph node once surgery has been performed.

References

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