

Anaplastic Large Cell Lymphoma- A Cytological Masquerade

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Citation

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Abstract

Histopathological examination with immunohistochemistry is the gold standard in the diagnosis and classification of Non Hodgkin's lymphoma (NHL). Fine needle aspiration cytology (FNAC), without immunophenotyping has a very limited role to play in the diagnostic workup of NHL. However, cytomorphological study may at times give definitive clues to know the type of NHL. We present a case of Anaplastic lymphoma kinase negative Anaplastic large cell lymphoma (ALCL) which on initial FNAC was missed but on review showed significant number of Hallmark cells.

INTRODUCTION

Anaplastic lymphoma kinase (ALK) negative ALCL is included as a separate provisional entity in the WHO classification of tumours of haematopoietic and lymphoid tissues. It is defined as a CD30+ T cell lymphoma that is not reproducibly distinguishable on morphological grounds from ALK positive ALCL, but lacks anaplastic large cell lymphoma kinase (ALK) protein.

Histologically it is characterized by lymphoid cells which are large with a bizarre horse shoe shaped or embryo-like nuclei and abundant cytoplasm. Histopathologic examination with immunophenotyping is considered a must for the diagnosis of ALCL. Cytological diagnosis of ALCL is very difficult and challenging. It can show a wide array of, often misleading cytomorphological features. Reported cases of ALCL on FNAC are very few. A salient cytological feature which has to be looked for in a suspected case is presence of Hallmark cells.

CASE REPORT

A 35 year old male presented with a swelling in the neck of 2 months duration. The swelling was in the left submandibular region measuring 1.5X1 cms. FNAC was done and smears prepared. The air dried smears were stained by Geimsa stain and the alcohol fixed smears were stained with Haematoxylin and Eosin stain. The smears showed lymphoid cells at varying levels of maturation admixed with occasional granulomas (fig 1 & 2). Few fragments of fibromyxoid stroma with interspersed spindle shaped cells

were seen. Background showed scanty lymphoglandular bodies. A conclusive diagnosis could not be made. However a diagnosis of chronic granulomatous lesion was suggested and excision biopsy was asked for. Histopathological examination of the excision biopsy specimen showed effaced nodal architecture with numerous histiocytes and good number of hallmark cells (fig 3, 4 & 5). The tumor was CD3 and CD 30 positive but ALK negative. A final diagnosis of ALK negative ALCL was given.

Review of the aspirate smears showed good number of hallmark cells with the classical embryoid nuclei and very occasional doughnut cells (fig 6, 7 & 8).

Figure 1

Fig 1: Occasional granuloma in a haemorrhagic background. Geimsa 20X

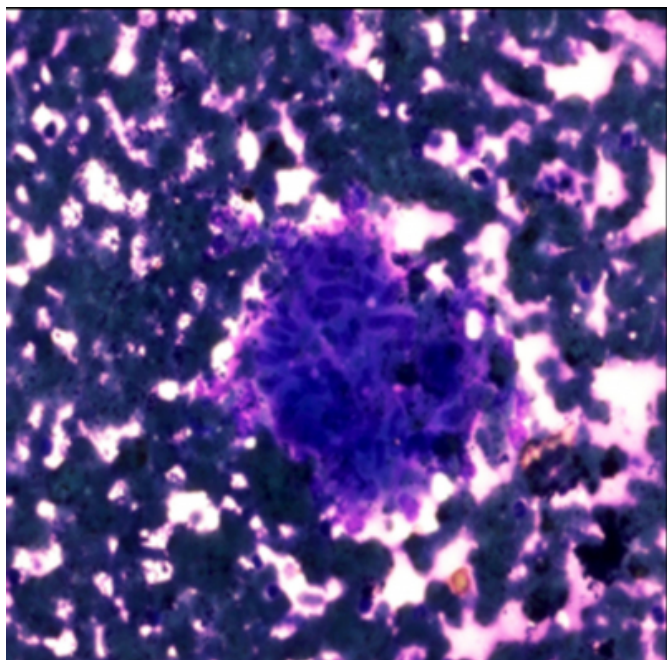


Figure 2

Fig 2: Polymorphous population of lymphoid cells. H&E 10X

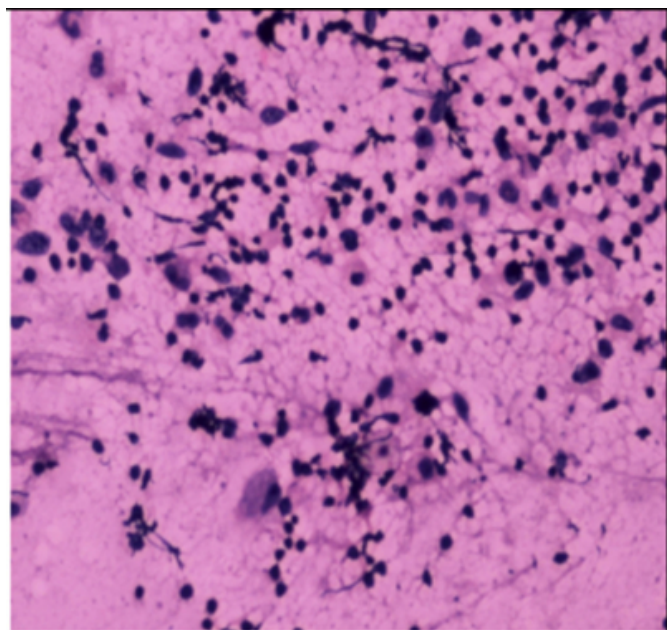


Figure 3

Fig 3: Effaced lymphnode architecture. H&E 4X.

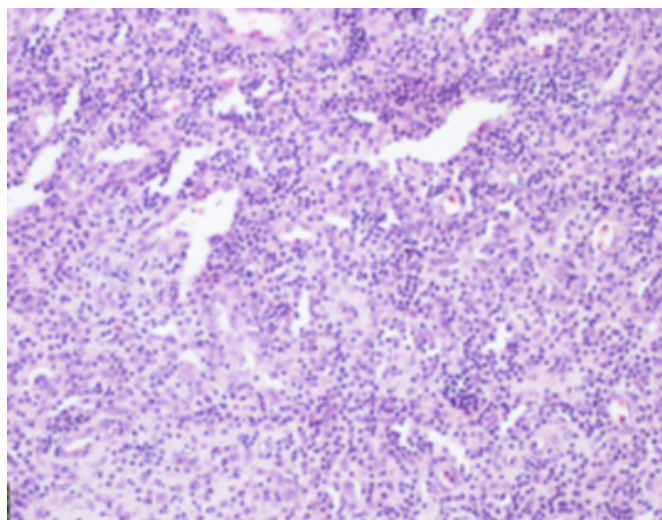


Figure 4

Fig 4: Histopatology showed good number of Hallmark cells (arrow). H&E 20X

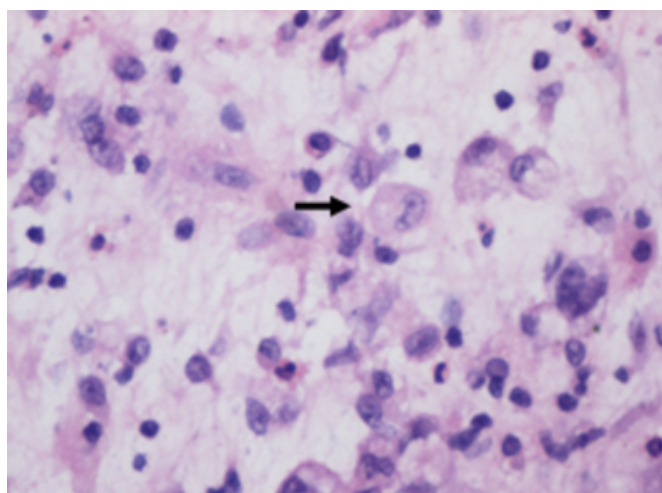


Figure 5

Fig 5: Multiple nuclei arranged in a wreath like pattern (arrow). H&E 20X

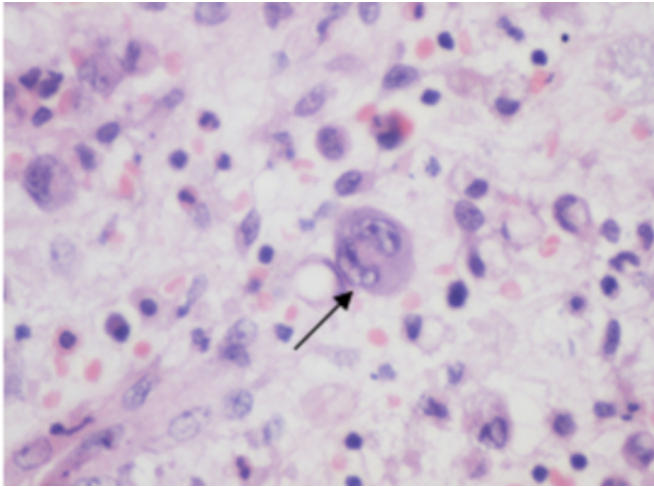


Figure 6

Fig 6: Aspirate smears showing embryo-like nuclei of Hallmark cells (arrow). H&E 20X

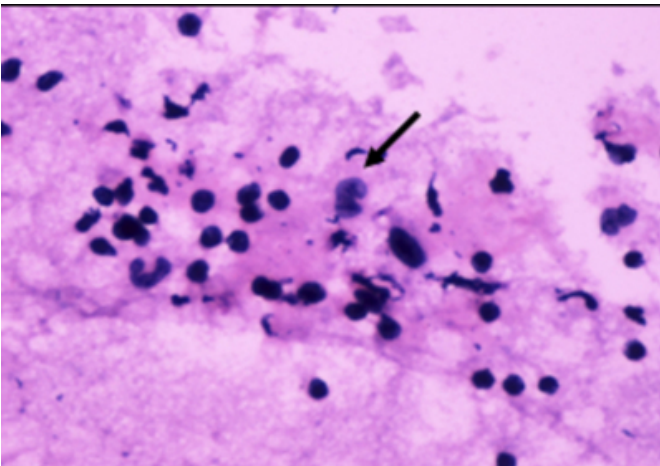


Figure 7

Fig 7: Aspirate smears showing embryo-like nuclei of Hallmark cells (arrow). H&E 10X

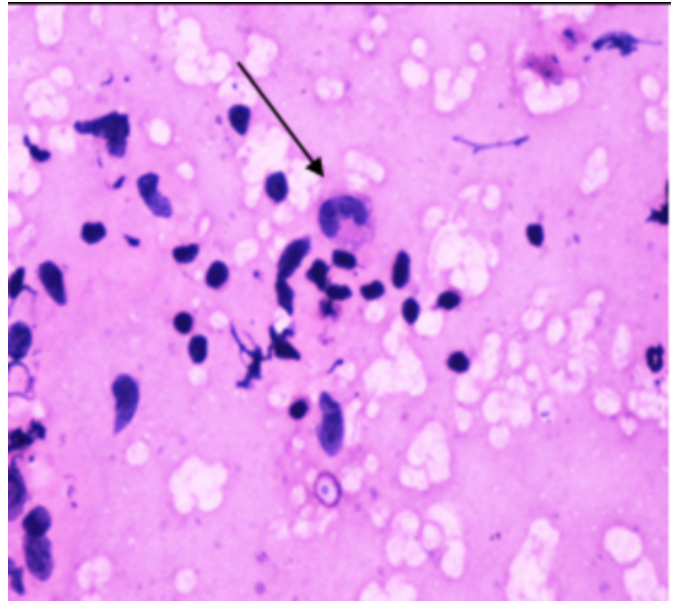
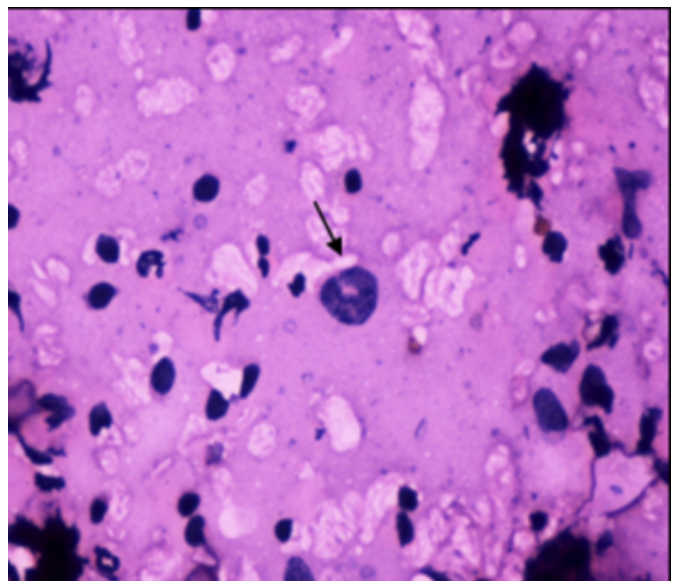


Figure 8

Fig 8: Aspirate smears showing Doughnut like nuclei (arrow). H&E 20X



DISCUSSION

FNAC is a primary investigative modality used in the evaluation of lymphadenopathy. It helps in differentiating an infective from a neoplastic process. This is of paramount importance because the therapeutic intervention is planned accordingly. An infective lymphadenopathy is treated medically without any surgical intervention whereas a neoplastic lymphadenopathy is biopsied and managed with

adjuvant therapy like chemotherapy and radiotherapy.

FNAC is slowly emerging as reliable diagnostic tool in lymphoma diagnosis. It has more diagnostic accuracy when immunophenotypic details are available. However, histopathologic diagnosis continues to be the preferred tool because therapeutic intervention can be planned only after reliable subclassification of lymphoma is done. Further, the diverse cytologic manifestation of lymphomas and the fact that literature on cytology of lymphoma classification is scant adds to its unpopularity as a diagnostic tool.

FNAC of ALCL can have varied cytomorphological features. It can be confused with a variety of conditions, both lymphoid and non lymphoid^{1, 2, 3}. Aspirate smears from cases of ALCL can show large number of reactive histiocytes which may at times mask the malignant cells. In the present case though there were few “Hallmark” cells, they were missed during the initial reporting due to the presence of good number of histiocytes and occasional granulomas. However, a careful review of the cytology smears revealed occasional classical Hallmark cells. It can also be

misdiagnosed as a metastatic carcinoma or a sarcoma^{1, 2}.

CONCLUSION

FNAC is a very useful tool for lymphoma subclassification in the hands of an experienced cytopathologist. ALCL is a distinctive type of NHL which can masquerade as a variety of neoplastic and nonneoplastic conditions. A careful and diligent search for the very subtle evidences in aspirate smears cannot be overemphasized.

References

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