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Role of immune staining in detecting extra-pattern and subtle lymphomatous infiltration in bone marrow biopsies of NHL patients

Noha Bassiouny Hassan, Yasmin N E L Sakhawry and Gehan M Hamed
Ain Shams University Hospital, Egypt

Introduction & Aim: Immunohistochemistry (IHC) enables the examination of a greater number of trephine biopsy levels and is helpful in determining additional scattered malignant cells. The aim of this study is to detect extra-pattern and subtle lymphomatous infiltration in bone marrow biopsies using CD20 and CD3 immunostaining.

Patients & Methods: This study was conducted on 100 newly diagnosed Non Hodgkin Lymphoma (NHL) patients. Their bone marrow trephine biopsies were assessed on routine histology [Hematoxylin and Eosin (H & E)] and were further subjected to IHC using CD20 and CD3.

Results: Pattern of involvement by H&E was highlighted by IHC. It showed additional interstitial pattern in nine cases, parasinusoidal streaks in one case and highlighted a patchy pattern in another case with interstitial involvement on H&E. IHC also detected subtle infiltrations on additional 5.5% cases compared with histology alone. It helped in differentiating reactive (12 cases) and malignant lymphoid infiltration (33 cases).

Conclusion: CD20 and CD3 immunostaining performed routinely on bone marrow trephine biopsies has the ability to reveal extra-pattern of infiltration and improve detection of subtle lymphoid involvement. A combined procedure identifying several distinctive features in particular histotopography and IHC, provides a promising way of discriminating reactive from neoplastic lymphoid infiltrates in bone marrow trephine biopsies.

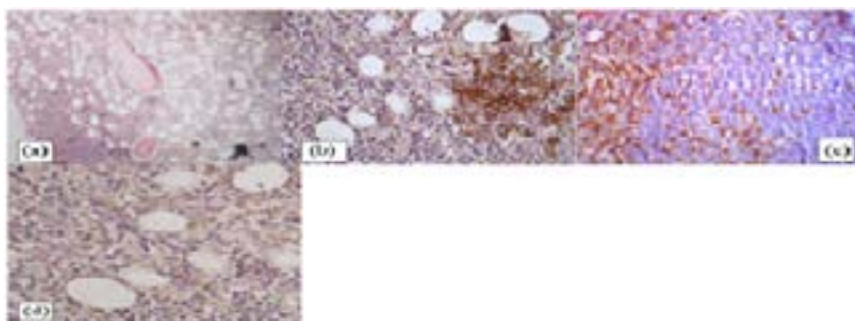


Figure 1: A case of B-NHL showing no obvious lymphoid infiltration in H & E ($\times 10$). (a) Positive patchy CD20 ($\times 10$); (b) Positive interstitial CD20 ($\times 10$); (c) Negative CD3 ($\times 10$). (d) Occult malignant lymphoid infiltration.

Recent Publications

1. Treetipsatit J (2013) Is immunohistochemistry mandatory in staging bone marrow trephine biopsy of patients with diffuse large B-Cell lymphoma (DLBCL)? Asian Archives of Pathology 9:79-80.
2. Chu P G, Loera S, Huang Q and Weiss L M (2006) Lineage determination of CD20-B-cell neoplasms: an immunohistochemical study. American Journal of Clinical Pathology 126:534-544.

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3. West R B, Warnke R A and Natkunam Y (2002) The usefulness of immunohistochemistry in the diagnosis of follicular lymphoma in bone marrow biopsy specimens. American Journal of Clinical Pathology 117:636-643.
4. Chetty R, Echezarreta G, Comley M and Gatter K (1995) Immunohistochemistry in apparently normal bone marrow trephine specimens from patients with nodal follicular lymphoma. Journal of Clinical Pathology 48:1035-1038.

Biography

Noha Bassiouny Hassan did her MD Clinical Pathology in Faculty of Medicine at Ain Shams University. She is working as a Lecturer of Clinical Pathology Hematology unit. She has a membership in the Egyptian Society of Thrombosis and Hemostasis.

dmohabassiouny@gmail.com

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