<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Age</strong></td>
<td>24 years</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td>male</td>
</tr>
<tr>
<td><strong>Localization</strong></td>
<td>lymph node dorsal musc. sternocleidomastoideus</td>
</tr>
<tr>
<td><strong>Clinical data</strong></td>
<td>NHL?</td>
</tr>
</tbody>
</table>
Preserved lymph node structure. Inconspicuous primary and some secondary follicles with germinal centers. Diffuse hyperplasia of paracortical pulp area with massive increase of blast cells.

Blast cells are CD30+, CD 20 and CD79a negative. Areas infiltrated by these blasts are illdefined mostly around small vessels and sinus. Very high proliferative activity. Immunoglobulin light chains are polytypic.
Molecular data

IgH FR3a and –FR2a PCR: polyclonal
TCR-gamma PCR: polyclonal
Differential diagnosis

Partial infiltration of l.n. by NHL (e.g. ALCL)?

If reactive:

Functional interpretation of findings?

Etiopathogenesis?
Donkey anti Mouse
Donkey anti Rabbit
m Ki67
r CD3
Donkey anti Goat
m CD79a
Goat anti FITC
Donkey anti Goat
Germinal center reaction

Extrafollicular reaction

Ki67  CD79a  IRF-4
Bild intrafollicular cells are CD79a+ IgL+. Chef spezial Mantel, Keim, Aussen3_Ov4Ausse in CD79a gruen, IgL rot, Icsat blau.jpg

Germinal center reaction

Extrafollicular reaction

CD79a IgL IRF-4
germinal center reaction
Extrafollicular pathways of the B-cell activation

- IgM + CD27 - CD138 - „short - lived“
- IgG + CD27 + CD138 + „long - lived“

IgG + CD27 + CD138 +

IgM + CD27 - CD138 - „short - lived“
B-cell development in lymph nodes

Ki67  CD20  CD79a  PAX5  PU1  BCL2  CD10  BCL6  IRF-4  BLIMP-1  IgG  CD27  CD138

plasma cell
protective memory

memory cell
reactive memory
Etiopathogenesis

Polyclonal activation of prefollicular (naive) B cells due to T cell independent antigens or superantigen (Bacterial polysaccharides or capsule components).

Polyclonal activation of memory B cells (anamnestic response, Virus, immune deficiency, BMTx ?)
Diagnosis Case #3

Hyperimmune reaction:
Marked extrafollicular activation of lymph node
Serology of Antibody Response

Serum level

IgM

IgG

time

Antigen challenge

Antigen booster
Germinal center reaction

Extrafollicular reaction
Literature

Brighenti A, Andrulis M, Geissinger E et al. (2005) Extrafollicular proliferation of B cells in the absence of follicular hyperplasia: a distinct reaction pattern in lymph nodes correlated with primary or recall type responses. Histopathology 47:90-100

Plasma cell proliferation and affinity maturation by somatic hypermutation and selection. Class switch occurs in the Germinal Center. B cells with CD27⁻ and IgM⁺ differentiate into plasma cells with CD27⁺ and IgM⁻, IgG/A⁺.