

## Clinical Image

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# Central nervous system relapse of a gray zone lymphoma

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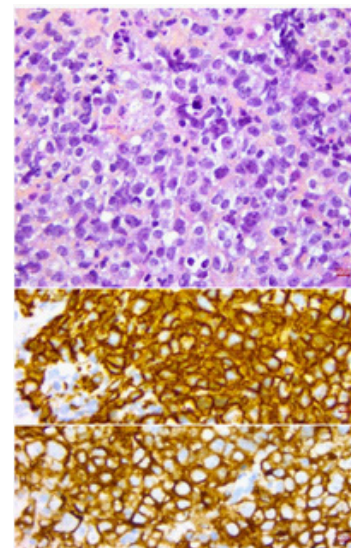
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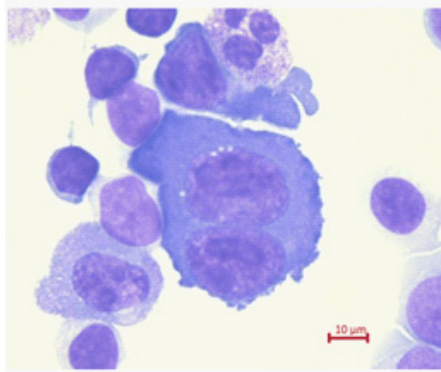
**Keywords:** Gray zone lymphoma; Central nervous system; Reed sternbergoid cells; Cerebral spinal fluid.

## Description

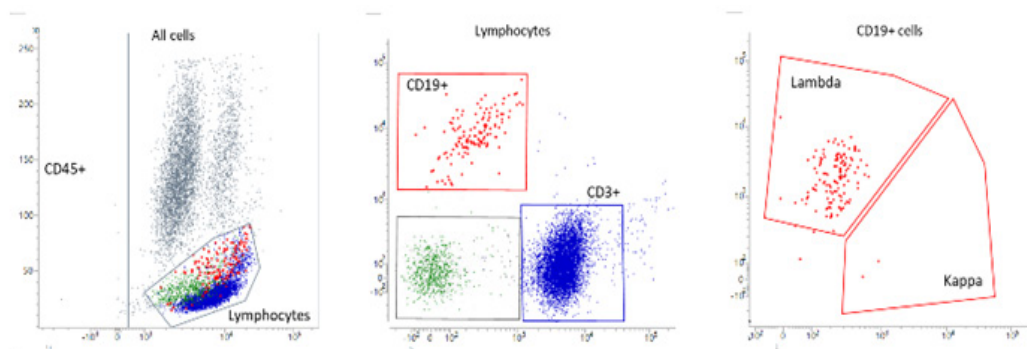
A 69-year-old woman diagnosed with mediastinal Gray zone lymphoma (Figure 1) was treated with R-DA-EPOCH with good clinical response. After 3 courses, she presented headaches; a lumbar puncture was performed revealing Cerebrospinal Fluid (CSF) infiltration by atypical lymphocytes ( $>1000$  cells/ $\mu$ l) and sternbergoid-like cells (Figure 2) confirmed by flow cytometry (Figure 3). Brain-MRI was normal. The patient received Methotrexate-Cytarabine based-chemotherapy and intrathecal injection of Methotrexate-Cytarabine-Corticosteroids with intent to proceed to autologous stem cell transplantation. Unfortunately, her neurological state declined (severe headaches, confusion). A new workup with lumbar puncture and brain MRI, revealed a decreased CSF infiltration (1 cell/ $\mu$ l) but synchronous appearance of brain nodules. Given the rapid deterioration in her general condition, we stopped her treatments. The patient died due to lymphoma progression. This report aims to show that gray zone lymphoma can infiltrate the central nervous system. To our knowledge, this is the first case described in the literature.



**Figure 1:** Hematoxylin and eosin stain, 40× objective (top), with positive staining of CD20 (middle) and CD30 (bottom).



**Figure 2:** CSF cytology shows a large basophilic binucleated cell with prominent inclusion-like nucleoli compatible with a Reed–Sternberg cell, in the background of lymphocytes, neutrophil and histiocyte; May-Grünwald-Giemsa staining, 100× objective.



**Figure 3:** Lambda chain expression by B cells population in CSF.