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Case Report

Metastatic angioimmunoblastic T-cell lymphoma started from thoracic paravertebral region: Case report

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INTRODUCTION

Angioimmunoblastic T-cell lymphoma (AITL) is one of the most frequent nodal T-cell lymphoma.[1,2] It derives from follicular helper T-cell (TFH).[3] It accounts for 15 - 20% of all peripheral T-cell lymphomas and usually affects patients in the seventh decade of life.[1,2,4,5] AITL's incidence is nearly 0,05 new patient case per 100,000 people in US, and there's no sex predilection.[6,7]

It is characterized by polymorphic lymph node infiltrate with a prominent proliferation of high endothelial venules and follicular dendritic cells, different immune disorders and a poor prognosis.[8,9] The neoplastic T-cells express CD2, CD3, CD4 and CD10 but the marker's specificity has been debated. More specific indicators of AITL are CXCL-13, programmed death-1 (PD1), inducible costimulator (ICOS), and BCL6 transcription factor.[10-12] Nearly all patients have EBV-infected B cells in their lymph nodes, but the presence of these EBV-positive cells doesn't correlate with survival.[13-15] However, the role of EBV isn't clear yet: it could be secondary to the immune deregulation, or it could be a fundamental factor involved in disease's start and progression. AITL is frequently associated with polyclonal B-cell or plasma cell proliferation;[8] this neoplastic proliferation of B-cells on parallel with AITL could be motivated by a cluster of pluripotent cells with the ability to differentiate into B-cells and T-cells neoplasm simultaneously, maybe due to exposition to pharmacological therapies or specific mutagens.

Clinical manifestations are often represented by group-B symptoms (fever, night sweats, weight loss), hepatosplenomegaly, anemia, lymphadenopathy, polyclonal hypergammaglobulinemia, thrombocytopenia and/or a large variety of immune disorders.[16,17] Up to 50% of develop cutaneous lesions, expression of extranodal diffusion of the tumor: urticaria, purpura, pruritic maculopapular eruptions, erosions, plaques, nodules, petechiae.[18-20] Despite occasionally spontaneous remissions,[21] AITL prognosis is poor, with a median overall survival of 3 years.

THERAPEUTIC OPTIONS

The first line of treatment is currently focused on anthracycline-based regimens: ACVBP (dose-intense Doxorubicin, Cyclophosphamide, Vindesine, Bleomycin, Prednisone), CHOP (Cyclophosphamide, Doxorubicin, Vincristine, Prednisone) or mBACOD (Methotrexate, Bleomycin, Doxorubicin, Cyclophosphamide, Vincristine, Dexamethasone). However, there is no difference in overall survival when comparing ACVBP, CHOP and mBACOD. Other substances could be added to this three "standard regimens" to improve survival of the patients: Thalidomide, Pralatrexate, Romidepsin, Belinostat, Rituximab, Alemtuzumab, Bevacizumab, Bortezomib, Zanolimumab. The real impact of this substances isn't entirely clear, for this reason, they aren't included in standard guidelines. However, the effects of any therapy are mostly short term and associated with early relapse.

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CASE PRESENTATION

A 74-year-old man was evaluated for persistent and severe chest pain in the substernal region developed from two months. During the last two weeks, the pain also appeared at the left hip and was associated with a quickly and progressive loss of the strength of the lower limbs. At the time of the evaluation, the patient showed lower extremity para-paresis, loss of sensation below to T7 and disappearance of left hip pain. Abdominal and thoracic CT showed a large right para-vertebral lesion extending from T2 to L2 (35×10×5 cm) with infiltration of V-VI-VII right ribs, right pleura, right vertebral pedicles-laminas transverse processes from T3 to T7 (Figures 1, 2, 3 and 4). The lesion penetrated into the vertebral foramen compressing the spinal cord from T5 to T6. Other three solid lesions were detected on the sternum body (3.4×2.7×2 cm), on the left para-vertebral muscles from L3 to S1 (5×4.3×9.7 cm) with contralateral extension, and on the left iliac crest (7×7×10 cm). The infiltration of the lesions determined pathological fractures of the VI rib and iliac crest. An echographic-guided FNAB of the right paravertebral lesion was made. The sample was composed of medium and small-sized lymphoid elements with poor basophil cytoplasm, central and prominent nucleoli. IHC revealed positivity for CD3 and CD4, and negativity for CD8, CD20, CD30, CD99. Large immunoblastic cells with positivity for CD138 (plasma B-cells marker) and MUM-1 (immunoblast marker) were also identified, these elements didn't show immunoglobulin light chain clonal restriction. Proliferation index Ki67 was 90%. There were consistent vascular proliferation and necrosis areas. On the basis of these elements, the Angioimmunoblastic T-Cell Lymphoma was diagnosed.

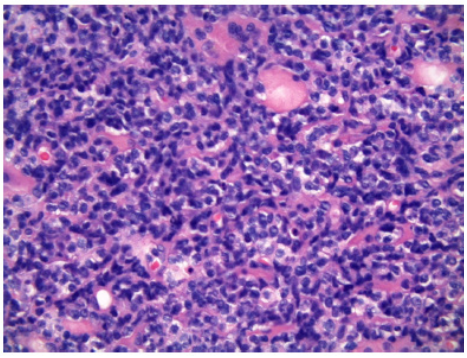

Figure 1: Hematoxylin and eosin-stained biopsy sample.

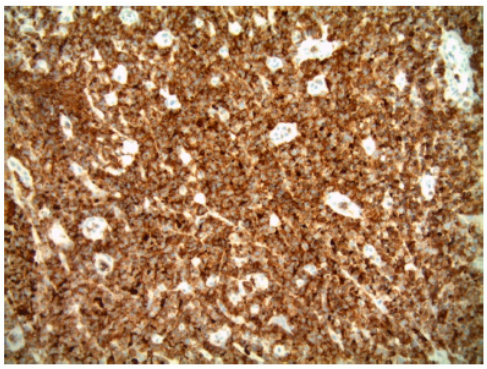

Figure 2: Diffuse positivity for CD3 (T-cell marker).

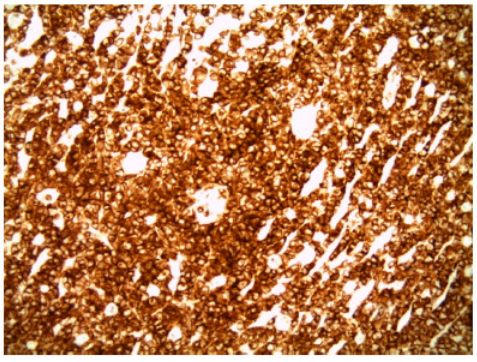

Figure 3: Diffuse positivity for CD4 (T-cell marker).

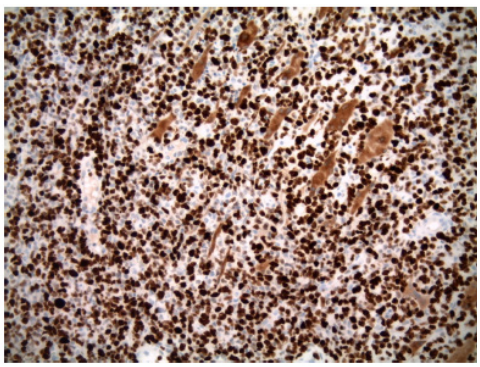

Figure 4: Proliferation index Ki67.

THERAPY Surgical stabilization or the verterbral column and tumor resection were impracticable because the extension and the size of the neoplasm and the massive infiltration into adjacent tissues, thus the only possible treatment was the chemotherapy (Figures 5 and 6). Given the poor condition of the patient, an aggressive chemotherapy was not possible, therefore the chosen regimen was the CHOEP regimen (Cyclophosphamide, Doxorubicin, Vincristine, Etoposide, Methylprednisolone). The first two courses of the treatment were well tolerated form hematological point of view and the patient did not show significant cytopenias. However, the neurological situation didn't improve: paraparesis and loss of sensibility remained unchanged. After the third course of chemotherapy, the patient underwent the usual control CT that showed a significant worsening of the disease: the paravertebral lesions increased of size and the spinal cord compression extended from T5 to T7 and a large right pleural effusion was detected (Figures 7 and 8). At this point, the chemotherapy was interrupted, and the patient underwent only palliative care. Few days later the patient died of septic shock.

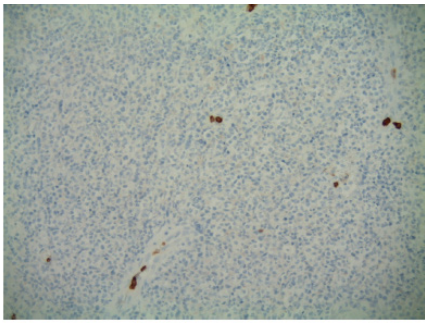

Figure 5: Negativity for CD8 (T-cell marker).

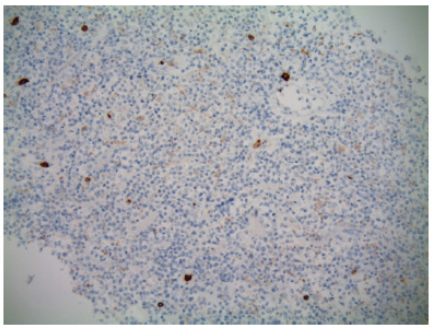

Figure 6: Negativity for CD20 (B-cell marker).

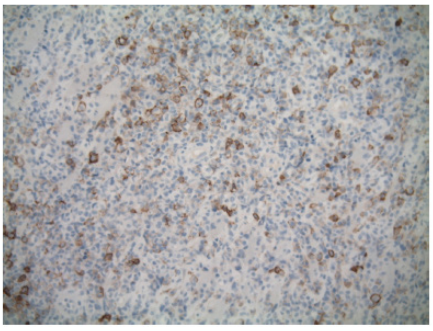

Figure 7: Positivity for CD138 (Plasma B-cells marker).

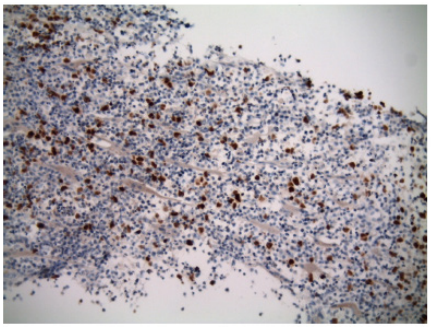

Figure 8: Positivity for MUM-1 (Immunoblast marker).

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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