Nasal-type NK/T-cell lymphoma: a case report

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SUMMARY

Extranodal NK/T-cell lymphoma represents less than 1% of all lymphomas, but is more common in Asia and South America. We present a 67-year-old female with a 10-month history of four reddish-blue firm and painful nodules in the parietal region of the head, ranging in size from 1 to 5 cm. Two nodules were taken for biopsy, which showed atypical lymphoid cells with angiocentric growth pattern. The immunophenotype of the tumor cells was CD45RO +, CD56 +, CD3 + (epsilon chain), CD20 –, consistent with the diagnosis of NK/T-cell lymphoma. NK/T-cell lymphomas are rare and the optimal treatment has not been clearly established.

KEY WORDS

NK lymphomas are a group of lymphoproliferative disorders derived from natural killer cells or their precursors that express NK cell-associated markers, and can be subdivided into extranodal NK/T-cell lymphoma and NK-cell leukemia (1, 2). The World Health Organization (WHO) classification of extranodal NK/T-cell lymphoma, nasal-type, states that the "nasal-type" NK/T-cell lymphomas are those occurring outside the nasal cavity and have variable presentations depending upon the major site of involvement (1). Extranodal NK/T-cell lymphomas account for less than 1% of all lymphomas, but are more common in Asia and South America (3). There is a strong correlation with Epstein Bar virus. It can be subcategorized into nasal and nasal-type according to the major sites of anatomic involvement. Nasal-type lymphomas primarily involve skin, soft tissues, and visceral organs (liver, spleen, and gastrointestinal tract) without any lesions within the nasal cavity and/or oral cavity, tonsils, pharynx, and larynx. Various names have been used to describe these tumors, including lethal midline granuloma, polymorphic reticulosis, and angiocentric lymphoma (3, 4).

We present a 67-year-old female with a 10-month history of four reddish-blue nodules in the parietal region of the head ranging in size from 1 to 5 cm. The nodules were firm and painful, and the covering skin was livid and tight. One node was ulcerated and covered with a hemorrhagic crust (Figure 1). The subman-

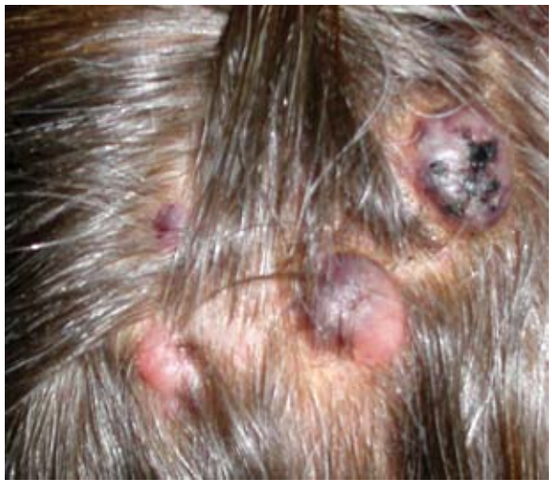

Figure 1: Reddish-blue nodules in the parietal region of the head. One is ulcerated and covered with hemorrhagic crust.

dibular and suboccipital lymph glands were palpable and painless. The patient was directed to our clinic with a diagnosis of Kerion Celsi.

Family history. A total hysterectomy had been performed eight years previously. The patient's father died of esophageal carcinoma, and her mother of uterine carcinoma.

Laboratory tests revealed a WBC count of 12.8 × 10^9/L, granulocytes 9.9x10^9/L, sedimentation 12/h, fibrinogen 6.8gL^{-1}. Serum triglyceride levels were normal and cholesterol was 6.57 mmolL^{-1}. Other laboratory parameters, including RBC count, hemoglobin, hematocrit, platelet count, MCV, MCH, MCHC, RDW, and liver function tests (lactate dehydrogenase, aminotransferase activities, total bilirubin, alkaline phosphatase, ã-glutamil transferase) were normal.

Mycological tests, including microscopic analysis of native specimens, and culture were negative.

Hemoculture, human immunodeficiency serology, and hepatitis B and C viruses were negative. Epstein-Barr virus serology showed: IgM Ø, IgG +; Cytomegalovirus: IgM Ø, IgG +++; and Herpes simplex virus: IgM Ø, IgG1 +, IgG2 Ø.

Chest radiography did not reveal infiltrates or enlarged nodes. Abdominal ultrasound examination showed normal liver and spleen, and no enlarged lymph nodes; a pseudocystic formation was present in the left kidney.

Two nodules were taken for biopsy, which showed atypical lymphoid cells with angiocentric growth patterns (Figure 2). The immunophenotype was CD45RO +, CD56 +, CD3 + (epsilon chain), CD20 ". A lymph node biopsy was not performed.

The patient was admitted to the Department of Oncology and treated with the CHOP chemotherapy regimen (cyclophosphamide, doxorubicin, vincristine, prednisolone).

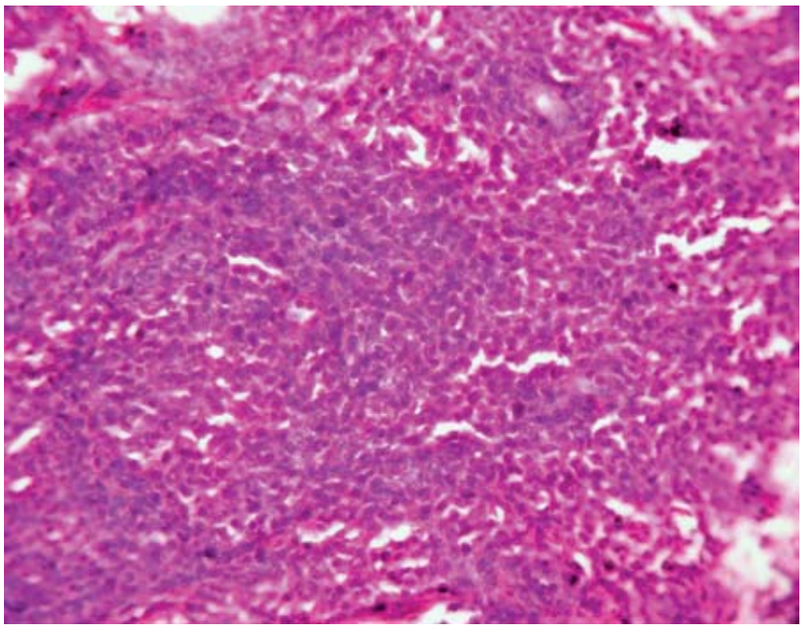

Figure 2: Nasal-type NK/T-cell lymphoma: angiocentric infiltrate of small lymphocytes and atypical lymphoid cells of various size. HE; 200×.

Nasal-type NK/T-cell lymphoma is an increasingly recognized disease entity with aggressive clinical behavior (5). NK/T-cell lymphomas exhibit a higher prevalence in East Asians and South Americans than in Europeans. This ethnic predisposition may be partly related to the prevalence of Epstein-Barr virus infection in East Asian patients (6). NK/T-cell lymphoma usually affects adult males more often than children and females, and the average age at presentation is the fifth decade (7). In our patient, the Epstein-Barr virus serology was negative for IgM and positive for IgG antibodies.

Clinically, nasal-type NK/T-cell lymphomas usually involve extranodal sites: skin, soft tissues, and visceral organs (liver, spleen, and gastrointestinal tract). At the time of diagnosis they are usually localized (8). The skin lesions may present as a generalized erythematous maculopapular rash or as multiple subcutaneous nodules that may be ulcerated (8, 9). At the time of diagnosis, our patient had four nodules, of which only one was ulcerated. The hair was not involved and remained firmly attached to the follicles. There were no secretions from the nodules. Microscopic analysis and cultivation for fungi were negative, excluding the initial diagnosis of Kerion Celsi. Further investigation did not reveal lesions in soft tissues, or in the visceral organs, and the oral and nasal cavities, tonsils, larynx, and pharynx were not involved.

Histologically, the infiltrates in extranodal nasal-type NK/T-cell lymphomas are composed of a mixture of atypical lymphoid cells exhibiting a wide cytological spectrum, admixed with reactive lymphocytes, plasma cells, and histiocytes (10). Eosinophils and neutrophils are rare or absent. In the early stages, relatively few small neoplastic cells are present. As a result, biopsy specimens obtained at an early stage of the disease can be misinterpreted as a benign process. Lymphoma cells can be small, medium-sized, or large, and often show irregular nuclear folding and granular chromatin. These neoplasms have a propensity to invade and destroy blood vessels, but angiocentricity is present only in 60–70% of cases (3). In our case, biopsy showed large, atypical lymphoid cells, admixed with inflammatory cells, invading the dermis in an angiocentric pattern.

Immunophenotypic studies of extranodal nasal-type NK/T-cell lymphomas have shown that most neoplasms express the NK-cell-associated antigen CD56, and NK/T-cell-associated antigens, such as CD2, CD7, and CD8 (11). These tumors also express cytoplasmic CD3, but are negative for T-cell–specific antigens such as surface CD3, CD5, and T-cell receptors, as well as the NK markers CD16 and CD57 (12, 13). Genotyping reveals monoclonal rearrangements of TCR genes in the majority of cases. In our case, the immunophenotyping of the lymphoid cells confirmed the diagnosis of NK/T-cell lymphoma.

In our patient the diagnosis was made on basis of the positive Epstein-Barr virus serology, as well as on morphological, histological, and immunohistochemical characteristics.

NK/T-cell lymphomas are rare, and the optimal treatment has still not been clearly established (6, 7). There have been several case series indicating an aggressive pattern and overall poor prognosis, and relapses are very common (14). In our case, there was no relapse during the period of observation.

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