

A case of nasal NK/T-cell lymphoma

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ABSTRACT

Extranodal NK/T-cell lymphoma (ENKTCL) nasal type is an increasingly recognised entity that is aggressive clinically and has a distinct clinico-pathological features that is associated with the *Epstein-Barr* virus. It was previously known as lethal midline granuloma which typically cause destruction of the mid face palatal and orbital walls. It can also involve the skin, soft tissue, testes, gastrointestinal and upper respiratory tract. ENKTCL expresses some T-cell associated antigens, most commonly CD2 and CD3e. We report a case of ENKTCL in a 28-year-old Indonesian pregnant female, who was referred for further management the destructive condition.

Keywords: NK cell, neoplasms, lymphoma, pregnancy, T-cell lymphoma

INTRODUCTION

Extranodal NK/T-cell lymphoma, nasal type (NKTCL) is a predominantly extranodal lymphoma that is characterised by distinctive morphology, immunophenotype and biological behaviour and is consistently associated with *Epstein-Barr* virus. Nasal-type NK/T cell lymphoma is known to be one of the most aggressive lymphomas and it is imperative to treat it aggressively at the early stage of the disease. We report the case of ENKTCL in a 28-year-old pregnant lady who was referred for the management of this destructive lesion.

CASE REPORT

A 28-year-old Indonesian lady who was eight

months pregnant was referred to our otolaryngology clinic with a six month history of right painful nasal swelling in association with nasal blockage which was progressively worsening and loss of weight. She denied any epistaxis, diplopia, frontal headache or facial numbness.

She was seen by an ENT surgeon in Indonesia and was told that she has a growth in her nasal cavity. A biopsy was taken and this was reported as a nasal tumour and was planned for surgery one week after delivery. Excision of tumour and septectomy was performed there. However three months later, she noticed foul smelling nasal discharge with an enlarging nasal swelling eroding the nasal mucosa and the collumella. She subsequently came to see us for a second opinion. Her family and social history were unremarkable.

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Fig. 1: Picture showing a large ulcerated midline nasal tumour with destruction of the nose.

Examination revealed a midline lesion eroding into the vestibule, columella tip and dorsum of the nose with surrounding inflammatory mucosa (Figure 1). Consistent with the previous surgery, the nasal septum and lateral wall were absent and the paranasal sinus bone and floor of nose exposed. The impression at that point of time was a midline granulomatous disease with a differential diagnosis of NK/T-cell lymphoma, Wegener's disease and basal cell carcinoma.

Biopsy from the right and left nasal cavity showed infiltration by malignant lymphoid cells which displayed angiocentric growth pattern. Immunohistochemistry staining were positive for CD2 and CD3, positive for cytotoxic molecule T1A1 and insitu hybridisation was positive for EBV. A diagnosis of ENKTCL was made. Patient was then referred to the oncologist for further management.

DISCUSSION

Extranodal NK/T-cell lymphoma, nasal type (ENKTCL) is a newly recognised entity in the WHO classification.¹ The head and neck region is the second most common anatomical site of extranodal lymphomas. Also known as nasal type NK/T-cell lymphoma or lethal mid-

line granuloma, ENKTCL is a rare Epstein-Barr virus (EBV)-associated non-Hodgkin's lymphoma (NHL). It commonly affects the nasal cavity and upper aerodigestive tract.^{2, 3} This type of lymphoma arises as a consequence of malignant transformation of the NK-cells (NKC). CD56+ (neural cell adhesion molecule), TIA-1 (T-cell intracellular antigen-1) and lack T-cell receptor (TCR) gene rearrangements (4) are expressed by this tumour which distinguish it from T-cell lymphomas.⁵ Virtually, all ENKTCL occur at extranodal sites and are difficult to diagnose and can be confused with other reactive processes from other aetiologies.⁶

ENKTCL can be aggressive due to its angiocentric, angioinvasive and angiodestructive behaviours. Destruction of vessels walls often leads to tissue necrosis which can be extensive.⁸ Along with inflammatory process, it typically leads to extensive destruction of the cartilages and the surrounding tissues with granulomatous like-lesions. In the head and neck region, ENKTCL predominantly affects the nose and midface region. Often patients present with disfiguring midline granulomatous lesions. The nasal septum, vestibule or turbinate may ulcerate with subsequent septal destruction and perforation.^{3, 11} Extensive bony and cartilaginous destruction can lead to autorhinectomy and oro-nasal fistula formation. Facial deformities occur resulting in extensive destruction and rapidly growing tumours can lead to the development of large fungating masses. It can also spread to the cervical lymph nodes, and systemically to other sites, such as the gastrointestinal system and bone marrow.⁹

Patients may present with growing purplish lesions, bleeding, purulent or blood-

stained nasal discharge with unilateral obstruction of the nasal cavity, resulting in difficulty in breathing¹⁰ and a reduced sense of smell.⁴

On histology, ENKTCL consist of a mixed pattern of small to medium sized atypical cells to large transformed cells.¹² The lymphoma cell nuclei often have an irregular nuclear folding with granular appearance. The cytoplasm is often pale. ENKTCL has been said to have a angiocentric growth. However, angiocentric growth pattern is not always present and angiocentricity can be observed in other lymphoma types, including B cell lymphomas.² A common striking feature is the extensive tumour necrosis to hinder a definitive histopathological diagnosis.²

ENKTCL share many common clinical features with T-cell lymphoma (TCL) and can only be differentiated through immunophenotyping and molecular genetic studies.⁷ The tumour cells typically have the immunophenotype of CD56+, CD2+ and cytoplasmic CD3+ and CD56 is a recognised NK-cell antigen, hence NK-TCL. Expression of CD3 antigen indicates presence of T-lymphocytes as NK-cells do not express this antigen (activated adult NK-cells are negative for CD20, CD5 and surface CD3).¹² ENKTCL positively expresses certain markers which are specific to NK-cells such as CD2, CD56, cytoplasmic CD3e, CD16, CD43, CD94.⁹ In addition, it has been recently reported that other cytotoxic molecules such as granzyme B and T cell intracellular antigen-1 (TIA-1) (76.2% of all ENKTCL), perforin and nm23-HI gene (42% of all ENKTCL) can be expressed in this type of lymphoma.

¹³

As ENKTCL is rare and a relatively newly recognised entity, optimal treatment strategies and prognoses have not been fully defined. Current evidence relies on retrospective studies and series reports, that have assessed radiotherapy alone to high-dose chemotherapy with stem cell transplantation. During the last few years several treatment options have been proposed. It is generally recognised, that ENKTCL is difficult to treat as the tumour is aggressive and standard NHL treatment with CHOP (cyclophosphamide, adriamycin, vincristine, prednisolone) chemotherapy followed by involved field radiotherapy has been unsatisfactory.¹⁴ Given that the initial response to radiotherapy (RT) can be rapid and dramatic, the use of involved-field RT has been accepted as the preferred treatment option for localised disease.¹⁵

In conclusion ENKTCL is generally very aggressive and if left untreated is uniformly fatal. It typically affects the nose and other midface structures and often leads to destructive and disfiguring lesions. Treatment needs to be aggressive and given that is a newly recognised entity, the best treatment regime remains undefined.

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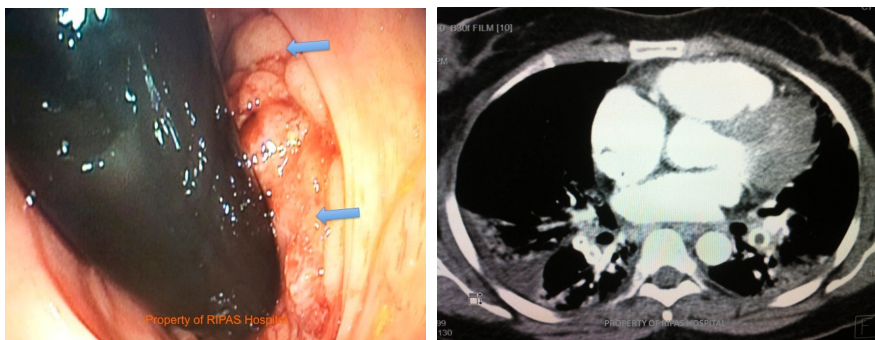
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