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Case Report

An Unusual Cause of Small Bowel Obstruction: A Case Report

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Abstract

Enteropathy-associated T-cell lymphoma (EATL) has been introduced since 2001 in the World Health Organisation's (WHO) international classification of tumours of haematopoietic and lymphoid tissues as a separate entity from T-cell lymphomas [1, 2]. The main characteristic of EATL besides its extreme rarity (less than 1% of all non-Hodgkin's lymphomas [NHL]) [3] and its location in the intestine is that it is associated with an enteropathy and develops from the intraepithelial T-lymphocytes of the intestine. This NHL can occur as a complication of a previously recognised enteropathy or may signal its presence, and its diagnosis is thus based mainly on intestinal mucosa lesions seen at some distance from the lymphoma. The most classic form of EATL is type I (80%), which is a serious complication of celiac disease (CD). CD is the only enteropathy that is associated with this particular NHL and the molecular bonds have now been better described [4-6]. The therapeutic management of EATL remains particularly difficult and its prognosis is very poor.

Keywords: Celiac disease, enteropathy, T-cell lymphoma, intestine.

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INTRODUCTION

Enteropathy-associated T-cell lymphoma (EATL) has been introduced since 2001 in the World Health Organisation's (WHO) international classification of tumours of haematopoietic and lymphoid tissues as a separate entity from T-cell lymphomas [1, 2]. The main characteristic of EATL besides its extreme rarity (less than 1% of all non-Hodgkin's lymphomas [NHL]) [3] and its location in the intestine is that it is associated with an enteropathy and develops from the intraepithelial T-lymphocytes of the intestine. This NHL can occur as a complication of a previously recognised enteropathy or may signal its presence, and its diagnosis is thus based mainly on intestinal mucosa lesions seen at some distance from the lymphoma. The most classic form of EATL is type I (80%), which is a serious complication of celiac disease (CD). CD is the only enteropathy that is associated with this particular NHL and the molecular bonds have now been better described [4-6]. The therapeutic management of EATL remains particularly difficult and its prognosis is very poor.

CASE REPORT

A 57-year-old woman who stopped gluten-free diet for more than 5 years after a 15-year history of celiac disease. The patient was admitted to the hospital for evaluation of fever, vomiting, weight loss and constipation of 2 days. The history was negative for night sweats. Clinical examination revealed pallor of the skin. The body examination was without particularity.

Hematological investigations revealed a hemoglobin of 10 g/dL. Abdominal computed tomography showed diffuse enhancing wall thickening of jejunum.

Jejunectomy was done following a diagnosis of small intestinal pseudo-obstruction.

Anatomopathological and immunohistochemical analysis of the small intestinal segment revealed villous atrophy, crypt hyperplasia with increased intraepithelial lymphocytes (IELs), associated with numerous inflammatory cells especially eosinophils, and diffuse medium sized to small abnormal lymphoid cells with coarse chromatin, irregular nuclear contours, with scant cytoplasm with

admixed large cells, some with binucleation (Fig 1 & 2), positive for CD3, CD5 and CD30 (Fig 3 & 4) but negative for CD20 (Fig- 6), CD4, CD8, CD56, Alk, MPO, AE1/AE3, S100 and CD68 consistent with enteropathy-associated T-cell lymphoma (Figures 1 and 2).

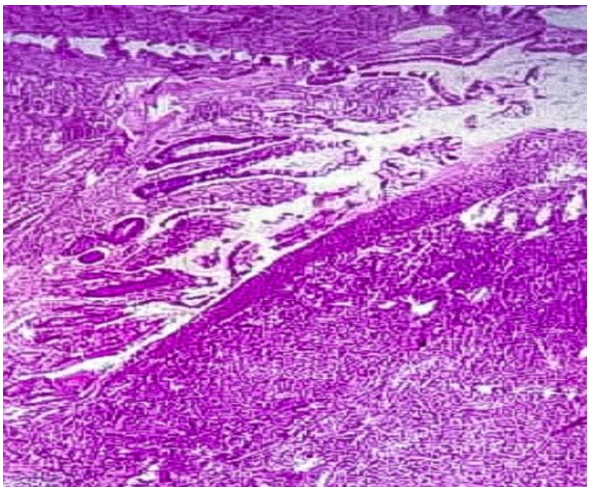

Fig-1: Enteropathy in the adjacent mucosa with villous atrophy and hyperplastic crypt [Hematoxylin and Eosin x25]

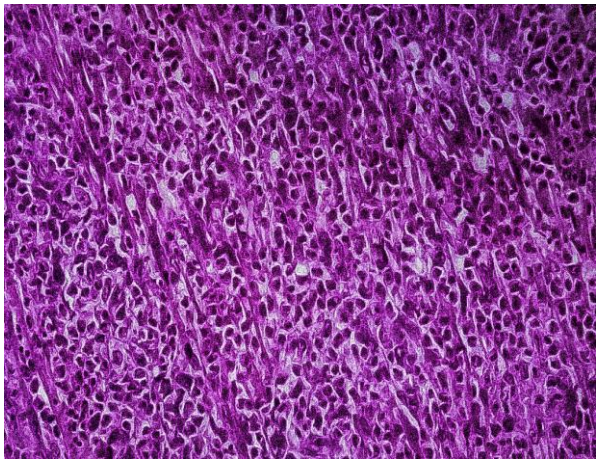

Fig-2: Large tumor cells with irregular nuclei admixed with inflammatory cells [Hematoxylin and Eosin x40]

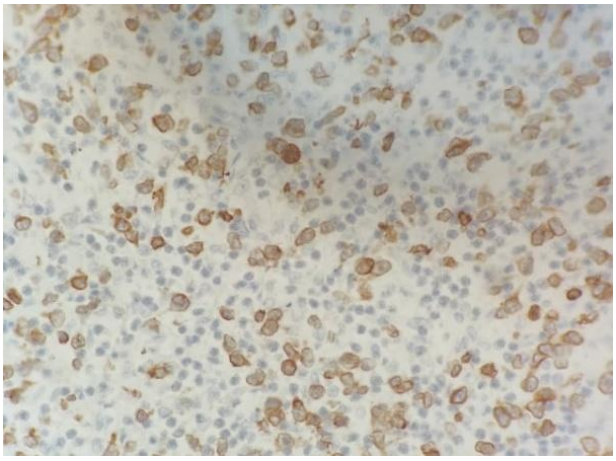

Fig-3: Large lymphoid cells express CD3 [Immunohistochemistry x40]

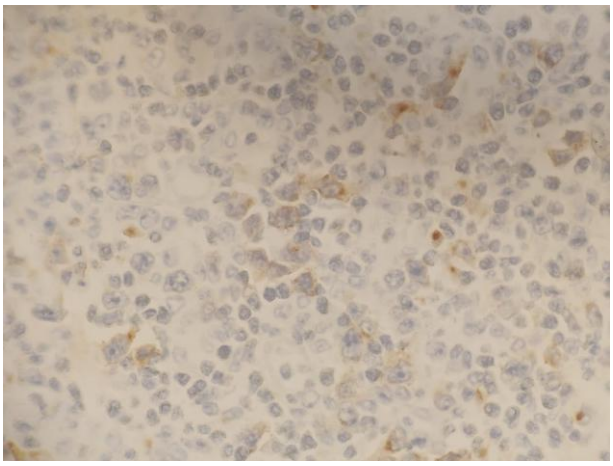

Fig-4: CD30 positive in some tumor cells [Immunohistochemistryx40]

Fig-5: KI67 showing hign index proliferation [Immunohistochemistryx25]

Fig-6: CD20 positive in reactive B cells [Immunohistochemistryx25]

DISCUSSION

An association between malabsorption and intestinal lymphoma was first described in 1937 by Fairley and Mackie [7]. In 1978, Issacson and Wright characterised celiac associated lymphoma as a single entity. Thereafter, Issacson used immunohistochemistry and T- cell receptor gene rearrangement studies to demonstrate the T cell derivation of this lymphoma [8]. In 1986, O'Farrelly introduced for the first time the term 'Enteropathy associated T cell lymphoma' due to the association of this lymphoma with villous atrophy of the jejunal mucosa adjacent to EATL [9].

EATL commonly presents in the sixth and seventh decades of life. There is no predominance according to gender. Usually patients present with bowel obstruction, small intestinal perforation, abdominal pain, weight loss and diarrhea. Most of time the jejunum is involved followed by other parts of the small intestine, colon and stomach. Tumour is frequently multifocal and forms ulcerating nodules, plaques, strictures or less commonly large masses. The mesentry is often infiltrated and mesentric lymph nodes are commonly involved [7, 8]].

EATL is subclassified as Type 1 and Type 2

Type 1 is the more common type. It is associated with celiac disease. It is rare in Asia, where celiac disease is uncommon. The time period between diagnosis of celiac sprue and onset of lymphoma is variable from one patient to another, ranging from few months to several decades. EATL-1 most commonly presents in patients with a short history of adult celiac disease and /or dermatitis herpitiformis. In a proportion of cases, there is no clinical symptoms and may only show histopathologic evidence of celiac disease in the form of blunted intestinal villi and increased intraepithelial lymphocytes (IEL) at the time of diagnosis of lymphoma. Rarely, patients may have normal or near normal small intestinal epithelium [8], as was noted in the present case.

Classic variant of EATL has a variable morphology and usually shows transmural lymphomatous infiltration by medium sized to large pleomorphic cells with conspicuous nuceoli accompanied by prominent mixed inflammatory infiltrate composed of histiocytes, small lymphocytes, plasma cells and eosinophils along with mitotic figures and necrosis. The mixed inflammatory infiltrate can be dense and at times obscure the lymphoma [8, 10].

On immunohistochemistry, the neoplastic cells are CD3+, CD5-, CD7+, CD8+/-, CD4-, CD56-, TCRβ+/- with variable CD30 expression. The intraepithelial lymphocytes adjacent to the lymphomatous infiltrate when present show the same immunophenotype [8].

Type 2 EATL patients have no history of celiac disease and show no villous atrophy. Iintraepithelial lymphocytosis is seen in the area adjacent to the tumor whereas the distant mucosa is near normal [10]. It shows monomorphic small to medium sized lymphocytes with slightly irregular nuclei and small nucleoli surrounded by scant pale cytoplasm, infrequent mitosis and sparse inflammatory background. Tumour cells are CD3+, CD4- , CD8+, CD56+ on immunohistochemistry and may express TCR-βF1 or TCRγ δ [10, 11]. No CD8 and CD56 positivity or TCR-β expression was noted in our case.

EATL has a very poor prognosis related to treatment resistance or complications especially sepsis or perforation of the bowel [12]. The differential diagnosis of EATL includes other T -cell lymphomas with intermediate to large cell morphology including anaplastic large cell lymphoma, extranodal NK/T cell lymphoma, nasal type, peripheral T-cell lymphoma NOS.

Anaplastic large cell lymphoma (ALCL) consists of large lymphoid cells with abundant cytoplasm and pleomorphic often horse shoe shaped nuclei and on immunophenotyping, the neoplastic cells are strongly positive for CD30 [13].

Extranodal NK/T cell lymphoma of nasal type mostly involve the upper aerodigestive tract, with dissemination to gastrointestinal tract. Microscopically, an angiocentric and angiodestructive growth pattern is frequently present. The immunoprofile of neoplastic cells is CD56, Granzyme B, TIA1, perforin and LMP1 positive [8, 10]].

Peripheral T-cell lymphoma, not otherwise specified demonstrates diffuse infiltrates of atypical cells of variable sizes, the cells often have clear cytoplasm with pleomorphic irregular nuclei and prominent nucleoli. Many mitotic figures are present. Often marked vascularity is shown. It typically present as nodal involvement, but any site may be involved [8].

The blastoid and pleomorphic variants of Mantle cell lymphoma (MCL) could also be considered. However, MCL mostly present as multiple lymphomatous polyposis and the expression of CD20 and cyclin D1 rule out this diagnosis.

CONCLUSION

Enteropathy-associated T-cell lymphoma (EATL) is a rare lymphoma with a poor prognosis and should be considered when evaluating non-Hodgkin lymphoma of the gastrointestinal tract. Morphology, immunohistochemistry and clinical history are mandatory to make this diagnosis. Finally patients who are unresponsive to CD diet or with deteriorating clinical condition should be investigated for the development of lymphoma.

Competing Interests

The authors declare that they have no competing interests.

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