

## Monomorphic epitheliotropic intestinal T-cell lymphoma presenting with jejunal perforation: A challenging diagnosis

Anju Shukla<sup>1</sup>, Sunil Sharad Dabadghao<sup>2</sup>, Poonam Singh<sup>3</sup>

From Senior Consultant, <sup>1</sup>Department of Lab Medicine, <sup>2</sup>Department of Hemato-oncology, <sup>3</sup>Consultant, Department of Lab Medicine, Sahara Hospital, Lucknow, Uttar Pradesh, India

**Correspondence to:** Dr. Anju Shukla, Sahara Hospital, Viraj Khand, Gomti Nagar, Lucknow, Uttar Pradesh, India.  
E-mail: anjushukla2012@gmail.com

Received – 09 May 2020

Initial Review - 25 May 2020

Accepted - 05 June 2020

### ABSTRACT

Monomorphic epitheliotropic intestinal T-cell lymphoma (MEITL) is an extremely rare and highly aggressive form of primary intestinal T-cell lymphoma previously classified as type II enteropathy-associated T-cell lymphoma (EATL). It has no clear association with coeliac disease and has varied non-specific clinical presentations and radiological findings. Herein, we discuss a case of MEITL presenting as jejunal perforation that was initially considered to be tuberculosis. Even in the presence of well-established epidemiological, histopathological, and immunophenotypic features, the diagnosis was delayed.

**Key words:** *Enteropathy-associated T-cell lymphoma, Jejunal perforation, Monomorphic epitheliotropic intestinal T-cell lymphoma, Tuberculosis*

Gastrointestinal (GI) lymphomas are generally secondary to widespread nodal disease. Primary GI lymphomas are rare and constitute only 1–4% of all GI malignancies. The most common site of involvement is the stomach followed by the small intestine and ileocecal junction. Small intestine involvement is seen in 20–30% of all GI primary lymphoma and a majority of them are of B cell lineage [1]. Intestinal T-cell lymphomas are even rarer comprising 10–25% of all primary lymphomas of the small intestine. They were previously known as enteropathy-associated T-cell lymphoma (EATL) and further subdivided into type I and type II [2]. EATL (type I) which is now simply designated as EATL constitutes the majority of these cases. It is commonly seen in Western countries, closely linked to coeliac disease and has a polymorphic cellular composition with areas of necrosis and inflammatory cell component.

EATL (type II) which is now known as monomorphic epitheliotropic intestinal T-cell lymphoma (MEITL) is a rare and clinically aggressive form of intestinal T-cell lymphoma and is a disease of the Asian population. It arises from intraepithelial T cells and histologically characterized by dense monomorphic atypical lymphoid infiltrate lacking necrosis or inflammatory background [3]. Roughly MEITL is 1/5<sup>th</sup>–1/10<sup>th</sup> as common as EATL but the actual incidence of this group is undetermined [4]. Although it has no association with coeliac disease, recent reports have suggested that a variant of coeliac disease may precede rare cases of MEITL [5]. Clinical presentations of MEITL are non-specific such as abdominal distension, diarrhea, nausea, weight loss, vomiting, obstruction, and perforation [5,6]. The majority of cases are initially treated as infective or inflammatory etiology

which leads to a delay in the treatment along with poor outcomes. Here, we are reporting a case of MEITL with a reminder to the clinicians that this might be a cause of intestinal perforation in the Asian subcontinent.

### CASE REPORT

A 30-year-old female admitted to the emergency ward with complaints of pain abdomen and multiple episodes of vomiting for 2 days. The pain was of sudden onset, severe in intensity, and was getting worse with the movement or any pressure on the abdomen. She was already on anti-tubercular treatment with a working diagnosis of abdominal tuberculosis, from another hospital. Detailed records of her previous illness were unavailable.

The general condition of the patient was poor with a toxic look and cold clammy extremities. On examination, tenderness was present over the left half of the abdomen with an absence of bowel sound. The pulse rate was 160/min, blood pressure was not recordable, and sPO<sub>2</sub> was 98%. The chest examination revealed bilateral crypts and rhonchi while no abnormality was detected in cardiovascular and central nervous systems examination.

Baseline investigation revealed anemia with polymorphonuclear leukocytosis and mild thrombocytopenia. The renal function test was also mildly deranged. Serum amylase was 644 U/L (13–60), serum lipase was 686 U/L (28–100), and procalcitonin was 193.12 ng/ml (<0.5). A provisional diagnosis of Koch's abdomen with pancreatitis and shock was made. The patient responded to preliminary treatment and volume replacement. Computed tomography (CT) scan of the abdomen

revealed multiple foci of free air in the interbowel region and anterior to the liver (Fig. 1a and b).

Emergency laparotomy was performed which showed bowel thickening at multiple levels, hollow viscous perforation at the distal jejunum, and small mesenteric lymph nodes. Resection and anastomosis were performed on thickened bowel perforation. Perforated bowel segment (Fig. 1c and d) was sent for histopathological examination.

Sections from the bowel segment revealed diffuse infiltration of medium-sized to large cells with round to angulated nuclei, prominent nucleoli, and a moderate amount of pale staining cytoplasm. The cells were seen infiltrating lamina propria, submucosa, the fibers of muscularis propria, and periserosal fat. Numerous mitosis, apoptosis, and small foci of necrosis were seen (Fig. 2a and b). Surrounding surviving area revealed

distorted jejunal folds with villous atrophy, crypt hyperplasia, intraepithelial lymphocytosis, and infiltration of tumor cells.

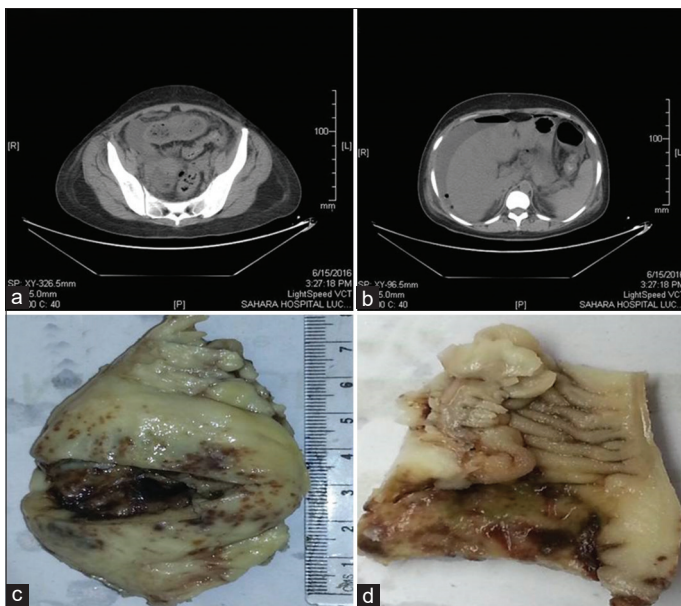
Sections were subjected to immunohistochemistry and CD 45, CD 3, CD 2, CD 7, CD 8, CD 56, Bcl-2, and megakaryocyte-associated tyrosine kinase (MATK) were positive in the tumor cells while CD 20, Tdt, CD10, and CD30 were negative. Loss of expression was noted for CD 5 and Ki 67 labeling index was 80–85% in the highest proliferating areas (Fig. 2c-f). Based on histology and immunohistochemistry, a diagnosis of MEITL was made; unfortunately, the patient was already in septic shock and she died due to cardiorespiratory arrest.

## DISCUSSION

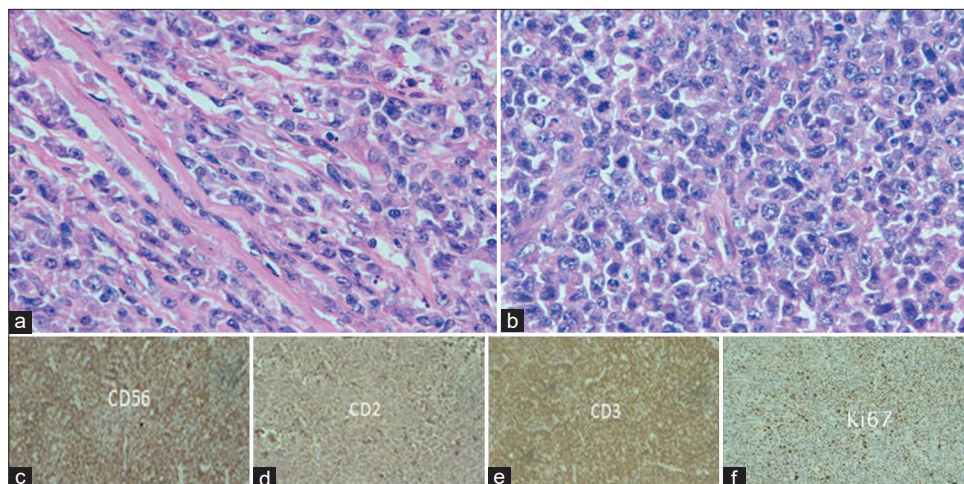
Monomorphic epitheliotropic intestinal T-cell lymphoma always poses diagnostic challenges and mainly manifests with GI symptoms. A past history of repeated diarrhea, weight loss, and other B symptoms may be a clue in EATL but for MEITL, the symptoms are generally non-specific.

In a multicenter study from Asia, the most common presenting features among a study group of 38 patients of EATL within a 19-year period were perforation (34%), pain (32%), and obstruction (21%) [7]. Although obstruction is a common presentation, diagnosis of MEITL was made possible only after the segmental resection of a perforated segment as seen in our case and also mentioned by others [8]. Recently, a similar case of MEITL was reported which was also treated with anti-infective and anti-diarrheal therapy due to previous unknown diagnosis and ultimately the patient died due to poor physical condition [9].

Radiology is not helpful in the diagnosis of MEITL. Bulky lymph nodes and maintenance of fatty plane may suggest lymphoma, but multiple thickening of the small intestinal wall, stricture, stenosis, and perforation favor Crohn's disease or tuberculosis [10]. Nowadays, CT and magnetic resonance enteroclysis and enterography have found a role in the study of a small intestine tumor [11] Due to a high spatial resolution, direct visualization of the wall and the surrounding structures are



**Figure 1:** (a) Computerized tomography scan abdomen showing multiple foci of free air in interbowel region (b) and anterior to liver (c) resected portion of jejunum showing perforation, sections already been taken from the margin (d) thickening of mucosa with ulceration



**Figure 2:** (a) Tissue section – jejunal segment showing atypical lymphoid cells infiltrating muscle fibers (hematoxylin and eosin [H and E], ×20). (b) Pleomorphic tumor cells showing numerous mitosis (H and E, ×40). (c) Immunohistochemistry CD56 (×10). (d) CD2 (×10). (e) CD3(×10). (f) Ki-67 (×10)

made possible. Significant thickening of the bowel wall >2.0 cm, presence of lymphomatous nodules and perivisceral multiple lymphnodes suggests lymphoproliferative disorder, while halo sign hyperdense mucosa, hypodense submucosa, hyperdense outer layer, discontinuous, segmental, and circumferential thickness (0.5–2.0 cm) favor inflammatory pathology [12]. Thus, CT enterography should be performed in all suspected cases.

Histopathology and immunophenotyping are essential for a definite diagnosis for MEITL. Differential diagnosis of MEITL is with other T-cell lymphomas, that is, EATL, extranodal NK/T-cell lymphoma and peripheral T-cell lymphoma, and not otherwise specific (NOS). The indolent T-cell lymphoproliferative disorder is being excluded from this list because it has low proliferative activity, non-destructive lymphoid infiltrate, and lack of epitheliotropism. Lack of expression of CD8, CD56, alpha-beta T-cell expression, and polymorphic infiltrates with necrosis favor EATL over MEITL [3].

Extranodal NK/T-cell lymphoma is also occurring in the GI tract with a similar presentation. Here, histology is distinct as wide areas of coagulative necrosis, apoptotic bodies, angiocentric/angiodigestive growth pattern, and inflammatory background. CD56 and nuclear expression of MATK are positive in both MEITL and NK/T-cell lymphoma. *In situ* hybridization for Epstein–Barr virus-encoded small RNA (EBER) is required for confirmation of NK/T-cell lymphoma [13]. In our case, EBER was not performed as histomorphology was not consistent with NK/T-cell lymphoma.

GI tract involvement of peripheral T-cell lymphoma, NOS is a diagnosis of exclusion. These patients generally have lymph node enlargement and an aberrant T-cell phenotype, which was not seen in the present case. In our case, the presence of distinctive histological features and immunohistochemistry; CD3(+), CD8(+), CD56(+), MATK (+), CD30(–), CD5(–), and CD103(–) rendered a diagnosis of MEITL.

No specific guidelines are available for the management of EATL or MEITL and thus clinical outcome is very poor with a median survival of only 8 months [7]. Treatment includes surgery, high-dose chemotherapy, and autologous stem cell transplantation.

## CONCLUSION

Diagnosis of MEITL is generally missed initially, thus detailed investigations on the very first visit and definitive management protocols are necessary to prolong the life expectancy of these

cases. Clinicians must be familiar that MEITL may as well be a cause of intestinal perforation.

## REFERENCES

- Ghimire P, Wu GY, Zhu L. Primary gastrointestinal lymphoma. *World J Gastroenterol* 2011;17:697-707.
- Ko YH, Kaman S, Kim KM, Park CK, Kang ES, Kim YH, *et al.* Enteropathy associated T-Cell lymphoma—a clinicopathologic and array comparative genomic hybridization study. *Hum Pathol* 2010;41:1231-7.
- Jaffe ES, Chott A, Ott G, Chan JK, Bhagat G, Tan SY, *et al.* Monomorphic epitheliotropic intestinal T-cell lymphoma. In: Swerdlow SH, Campo E, Harris NL, Jaffe ES, Pileri SA, Stein H, editors. *WHO Classification of Tumours of Haematopoietic and Lymphoid Tissue*. 4<sup>th</sup> ed. Lyon: IARC Press; 2017. p. 377-9.
- Ondrejka S, Jagadeesh D. Enteropathy-associated T-cell lymphoma. *Curr Hematol Malig Rep* 2016;11:504-13.
- Ishibashi H, Nimura S, Kayashima Y, Takamatsu Y, Aoyagi K, Harada N, *et al.* Multiple lesions of gastrointestinal tract invasion by monomorphic epitheliotropic intestinal T-cell lymphoma, accompanied by duodenal and intestinal enteropathy-like lesions and microscopic lymphocytic proctocolitis: A case series. *Diagn Pathol* 2016;11:66.
- Ronald S, Obada T, Timothy K, Hamza A, Vikram J. Monomorphic epitheliotropic intestinal T-cell lymphoma: Arare cause of chronic diarrhea. *Am J Gastroenterol* 2018;113:1408-11.
- Tse E, Gill H, Loong F, Kim SJ, Ng SB, Tang T. Type II enteropathy-associated T-cell lymphoma: A multicenter analysis from the Asia lymphoma study group. *Am J Hematol* 2012;87:663-8.
- Kim YS, Choi YS, Park JS, Kim BG, Cha SJ, Chi KC, *et al.* Case of small bowel perforation due to enteropathy-Type T-cell lymphoma. *Yonsei Med J* 2009;50:859-61.
- Deng J, Zou Y, Li G. A Case report of monomorphic epithelial intestinal T-cell lymphoma and literature review. *Int J Clin Med* 2020;11:15-22.
- Tian S, Xiao SY, Chen Q, Liu H, Ping J. Monomorphic epitheliotropic intestinal T-cell lymphoma may mimic intestinal inflammatory disorders. *Int J Immunopathol Pharmacol* 2019;33:2058738419829387.
- Re GL, Cappello M, Tudisca C, Galia M, Randazzo C, Craxi A, *et al.* CT enterography as a powerful tool for the evaluation of inflammatory activity in Crohn's disease: Relationship of CT findings with CDAI and acute phase reactants. *Radiologica Medica* 2014;119:658-66.
- Re GL, Federica V, Midiri F, Picone D, Tona GL, Galia M, *et al.* Radiological features of gastrointestinal lymphoma. *Gastroenterol Res Pract* 2016;2016:2498143.
- Tang XF, Yang L, Duan S, Guo H, Guo QN. Intestinal T-cell and NK/T-cell lymphomas: A clinicopathological study of 27 Chinese patients. *Ann Diagn Pathol* 2018;37:107-17.

*Funding: None; Conflict of Interest: None Stated.*

How to cite this article: Shukla A, Dabadghao SS, Singh P. Monomorphic epitheliotropic intestinal T-cell lymphoma presenting with jejunal perforation: A challenging diagnosis. *Indian J Case Reports*. 2020;6(6):332-334.

Doi: 10.32677/IJCR.2020.v06.i06.016