

## Histiocytic Sarcoma and Its Relation With Coeliac Disease

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Ozben Yalcin<sup>1</sup>, Fatih Mert Dogukan<sup>1</sup>, Elif Gökce Devecioglu<sup>1</sup>, Esin Kabul Gurbulak<sup>2</sup>,  
Seval Akpınar<sup>3</sup>, Fevziye Kabukcuoglu<sup>1</sup>, Tulay Tecimer<sup>4</sup>

<sup>1</sup>Department of Pathology, Sisli Etfal Research and Training Hospital, Istanbul, Turkey  
<sup>2</sup>Department of General Surgery, Sisli Etfal Research and Education Hospital, Istanbul, Turkey  
<sup>3</sup>Department of Hematology, Sisli Etfal Research and Training Hospital, Istanbul, Turkey  
<sup>4</sup>Department of Pathology, Acibadem University Medical Faculty Hospital, Istanbul, Turkey

### Abstract

**Background:** *In this report, the clinical and the histopathological findings of histiocytic sarcoma manifesting as an intestinal mass with coeliac disease are presented.*

**Case Report:** *Histiocytic sarcoma is the malignant proliferation of cells showing morphological and immunophenotypical features of mature tissue histiocytes. The histiocytic sarcoma is usually an aggressive neoplasm, with a poor response to therapy.*

**Conclusion:** *People with coeliac disease (CD) are known to be at increased risk of malignancy but its relation with histiocytic sarcoma is unpublished.*

**Key words:** *Histiocytic sarcoma, coeliac disease, intestinal tumor.*

### Introduction

Histiocytic sarcoma, is a rare malignant proliferation, which shows morphological and immunological characteristics of mature tissue histiocytes. The majority of cases usually presents as extranodally localized in tissues such as intestinal tract, skin and soft tissue (1). Cases with intestinal lesions often result in intestinal obstruction and also hepatosplenomegaly and associated pancytopenia can occur (2). Coeliac disease (CD) is an auto immune disorder, which is triggered in genetically susceptible individuals by ingestion of gluten. They have an increased risk of malignancy particularly in non-Hodgkin's lymphoma (3). Herein, we report a case of primary histiocytic sarcoma with CD. We also present the histopathological characteristics of histiocytic sarcomas by literature review.

### Method

S-100, CD68, CD1a, EMA, panCK, CD34, HMB-45, cKit, CD20, CD3, CD30 and CD15 are used in immunohistochemical examination.

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\* Corresponding author: Ozben Yalcin, Sisli Etfal Hamidiye Eğitim ve Araştırma Hastanesi Patoloji Kliniği E-mail: ozbena@yahoo.com, GSM: +902123735000

## Case

37 years old male patient, presented to the epicenter with complaints of diarrhea, weight loss, nausea and vomiting 4 years ago. He was being treated with gluten-free diet for about 1.5 months for suspicious gluten enteropathy. Because his complaints didn't cease, he went to another health center and gastroduodenoscopy biopsies were taken. In the pathology report; chronic duodenitis, partial villous atrophy, villus blunting, crypt hyperplasia and increased intraepithelial lymphocytes were detected (Fig. 1) and found to be consistent with CD. The patient did not pay attention to diet. Four years later he was admitted to the emergency room with sudden abdominal swelling, bowel obstruction and concurrent bowel resection was performed.

The patient underwent palliative subtotal ileal resection due to obstruction. The resected specimen showed a huge, ulcerofungating mass in the whole part of the ileum. On cut section, the tumor was white-tan, solid, and somewhat rubbery in consistency. Microscopically, tumor cells showed diffuse infiltration from the mucosa to the serosa (Fig. 2). Inflammatory cells were intimately admixed with tumor cells (Fig. 2). Tumor cells had large sized nuclei with plump, pink cytoplasm. Nuclei were ovoid to elongated and frequently showed convoluted or overlapping shapes. The chromatin was fairly vesicular, and one or two micronucleoli were discernible. Pleomorphic or multinucleated tumor giant cells were also observed (Fig.3). The majority of admixed inflammatory cells were mature lymphocytes followed by plasma cells. Some neutrophils and occasional eosinophils were also noted. Widespread lymphatic vascular and lymph node invasions were observed (Fig. 4). Venous thrombi formed by neoplastic cells and perineural invasions were present. Mitotic figures were found up to 8 per 10 high power fields.

The immunohistochemical study of neoplastic cells showed diffuse staining with CD68 (Fig.5), CD4, CD163 and S100 was weak positive. There was no staining with CD1a, EMA, panCK, CD34, HMB-45, cKit, CD20, CD3, CD30 and CD15. The case was reported as compatible with histiocytic sarcoma.

## Discussion

Histiocytic sarcoma is a rare neoplasm occurring usually in the elderly. Average age is 52 and seen more often in males (4).

CD is an immune-mediated systemic disorder elicited by gluten and related prolamines in genetically susceptible individuals and characterised by the presence of a variable combination of gluten-dependent clinical manifestations, CD-specific antibodies, HLA-DQ2 or HLA-DQ8 haplotypes, and enteropathy. CD-specific antibodies comprise autoantibodies against TG2, including endomysial antibodies (EMA), and antibodies against deamidated forms of gliadin peptides (5).

Some tumors together with histiocytic sarcoma have been reported in the literature. One of these tumors is malignant mediastinal germ cell tumor including teratoma (6). Malignant lymphoma is found to be associated with histiocytic sarcoma in some reports (7). Even transdifferentiation of B cell lymphoma to histiocytic sarcoma has recently been described (8).

CD has an increased risk of malignancy, particularly of non-Hodgkin's lymphoma. In a study, an immunophenotypically aberrant clonal intraepithelial T-cell population (similar to that of most cases of enteropathy-associated T-cell lymphoma-EATL) was found in up to 75% of patients with refractory coeliac sprue (9). The association between non-Hodgkin's lymphoma and coeliac disease have been confirmed in some studies (10). Grainge and friends observed only 2 malignant histiocytosis, 4 reticulosarcoma, 1 lymphosarcoma cases in a cohort of 446 CD patients (11).

Histiocytic sarcoma is a very rare neoplasm, and only a limited number of cases have been reported. Although it occurs in lymph nodes, the majority of cases present in extranodal sites, most commonly the gastrointestinal tract, skin, and soft tissues. In the gastrointestinal tract, primary gastric involvement have been reported.

Histiocytic sarcomas usually consist of diffuse, noncohesive proliferation of large cells which are commonly pleomorphic. Large multinucleated nuclei are frequently observed, and single prominent nucleoli are found in most of the tumor cells. Based on morphological similarities, diffuse large B-cell lymphoma or anaplastic large cell lymphoma has long been misdiagnosed as a malignant histiocytic lesion. The diagnosis on a biopsy specimen is even more difficult, and the findings may be more suggestive of an inflammatory lesion such as an inflammatory pseudotumor than of a malignant process (12).

In present case, based on morphologic similarities large cell non-Hodgkin lymphomas, carcinoma and melanoma should be excluded by immunohistochemistry. While positivity of CD68 and S100 suggests histiocytic sarcoma, the negativity of CD20, CD3 and CD5 excludes B or T cell large cell lymphomas, the negativity of CD30 and ALK excludes anaplastic large cell lymphoma, the negativity of CD21 and CD23 excludes follicular dendritic cell neoplasms, the negativity of panCK excludes carcinoma, the negativity of HMB-45, Melanin A excludes malign melanoma.

In summary, histiocytic sarcoma is a rare but controversial hematopoietic neoplasm. In the past, malignancies have been misclassified as histiocytic tumors due to overlapping histologic features and inadequate phenotypic data. This is the first case in the English Literature, that histiocytic sarcoma is together with coeliac disease. It is not known that CD increases the risk of histiocytic sarcoma. We need more research on this topic.

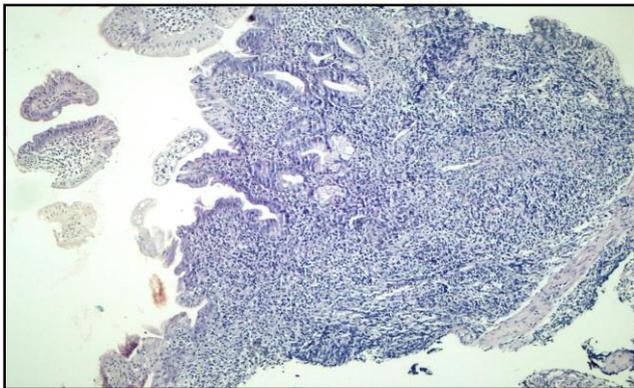


Figure-1: Duodenal biopsy: chronic duodenitis, partial villous atrophy, villus blunting, crypt hyperplasia, increased intraepithelial lymphocytes

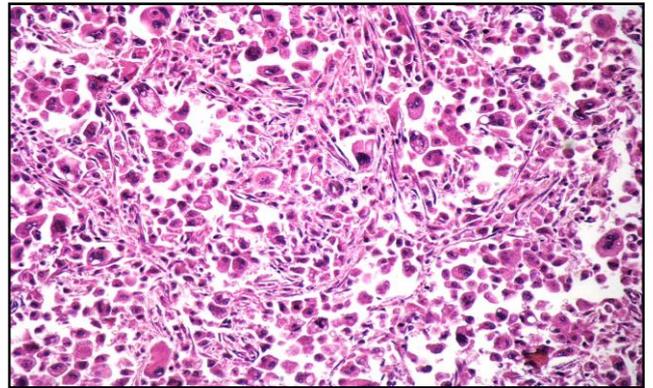


Figure-2: Intestinal biopsy: tumor cells showed diffuse infiltration from the mucosa to the serosa

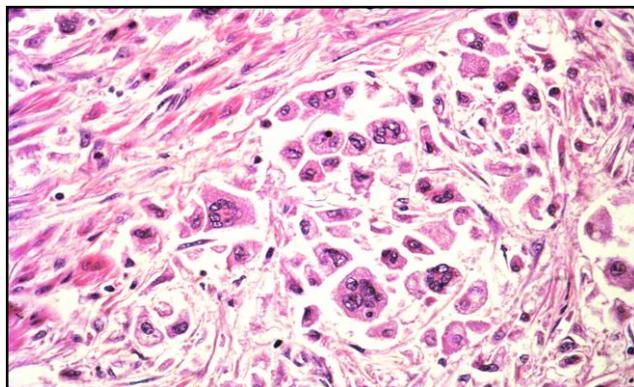


Figure-3: Multinucleated tumor cells are observed

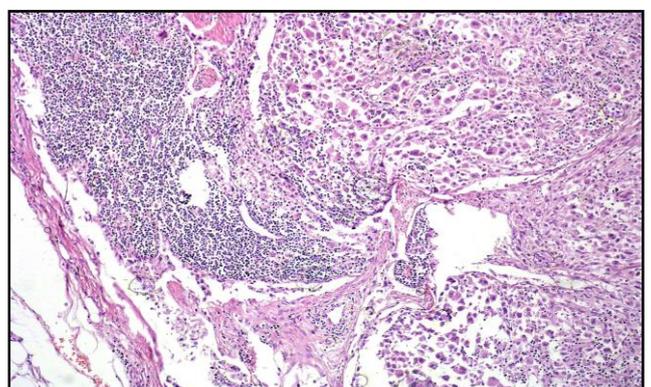


Figure-4: Lymph node invasion is observed

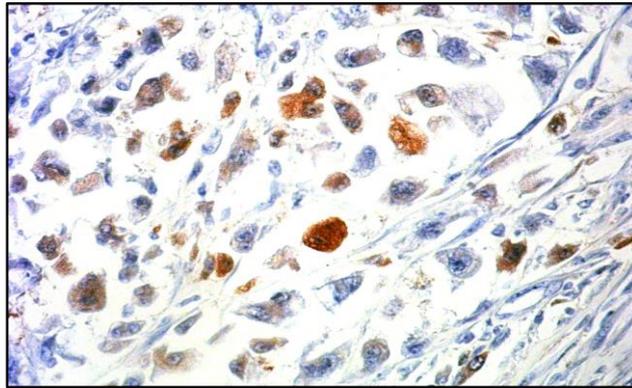


Figure-5: Immunohistochemical stain for CD68

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