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CLINIC CASE

Resolution of aneurysmal dilatation of the small bowel after chemotherapy

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Abstract

Lymphoma with gastrointestinal tract involvement can be infiltrating and appear as wall thickening with destruction of the normal small bowel fold and caused aneurysmal dilatation of the affected bowel loops. Most of the cases that have been reported were managed with surgical resection of the dilated segment. We present a case of a patient with high-grade B cell lymphoma where aneurysmal dilatation significantly improved after chemotherapy.

Key words: *Lymphoma. Intestinal neoplasms. Dilatation. Pathologic.*

Resolución de la dilatación aneurismática del intestino delgado después de quimioterapia

Resumen

El linfoma con compromiso del tracto gastrointestinal (GI) puede ser infiltrante y aparecer como engrosamiento de la pared con destrucción de los pliegues normales del intestino delgado y dilatación aneurismática de las asas intestinales afectadas. La mayoría de los casos reportados se manejaron con resección quirúrgica del segmento dilatado. Presentamos el caso de un paciente con linfoma de células B de alto grado en el cual la dilatación aneurismática mejoró significativamente tras la quimioterapia.

Palabras clave: *Linfoma. Neoplasias intestinales. Dilatación. Patológica.*

Introduction

Aneurysmal dilatation of the small bowel is a radiological pattern seen when malignant cells invade the muscularis propria and disrupt the autonomic nerve plexus causing bowel lumen enlargement and associated wall thickening[1]. It was first described in 1969 by Cupps who noted the pattern in 35% of small bowel lymphoma cases on fluoroscopic barium studies[2].

Case report

A 23-year-old male without the previous conditions seek medical attention for a growing mass in the left axilla. Associated symptoms of weight loss, diaphoresis, and mild abdominal pain were also noted. After a biopsy of the mass was performed, a diagnosis of high-grade B cell lymphoma was made. Initial extension abdominal computed tomography (CT) with intravenous contrast

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showed nonspecific bowel wall thickening. Subsequent anterograde enteroscopy revealed severe inflammation of the jejunal mucosa with ulceration and cobbled appearance. Progressive, severe abdominal pain and intractable emesis prompt for a new CT. The most relevant findings were bowel wall thickening involving jejunum and ileum, abnormal dilatation up to (aneurismal dilatation), ileo-ileal jejunal invagination, and multiple lymphadenopathies (Fig. 1).

In face of worsening symptoms and CT findings, exploratory laparotomy was carried out. Due to an increased risk of extensive intestinal resection, enterotomies and other possible complications, additional interventions were withheld, and the surgical procedure was interrupted. Symptoms resolved after conservative treatment and adjuvant chemotherapy. A follow-up CT 2 and 5 months after chemotherapy showed significant improvement in bowel dilation and thickening (Fig. 2).

Figure 1. A 23-year-old male with aneurysmal dilatation of the small bowel. Computed tomography of the abdomen **(A)** coronal soft-tissue window and **(B)** axial before chemotherapy.

Discussion

Small bowel tumors only represent 5% of all neoplasms in the GI tract. Primary GI lymphoma is far less common than secondary GI involvement[3]. In 5–20 % of all extra nodal non-Hodgkin's lymphoma there is compromise of the GI tract, mostly non-Hodgkin's lymphomas[3,4].

It has been classically stated that the most frequent site of GI lymphoma is the stomach, followed by the small intestine, colon, cecum, and esophagus. In the small bowel, the distal ileum is most frequently affected, in line with its highest concentration of lymphoid tissue. The most common histologic lymphoma subtype is diffuse large B cell lymphoma[5,6].

Four major patterns of small bowel lymphoma have been identified on radiographic studies. First, lymphoma can appear as multiple nodules within the small bowel[6]. Second, lymphoma can appear as a single mass lesion. Third, lymphoma can be infiltrating and appear as wall thickening with destruction of the normal small bowel folds and aneurysmal dilatation of the affected bowel loops. This has been described in up to 50% of cases. The fourth pattern is that of an exophytic mass. Other findings such as lymphadenopathy and hepatosplenomegaly are common[6-8].

In our case, nodal non-Hodgkin's lymphoma compromised multiple segments of small intestine with aneurysmal dilatation, multiple lymphadenopathies, and secondary invagination. Classically described by Norfray, aneurysmal dilatation occurs as the lymphoma grows and infiltrates along the bowel axis. Various mechanisms induce bowel dilation and thickening: infiltration by tumor cells weakens the bowel wall in the absence of desmoplastic reaction and fibrosis. The small intestinal wall weakening occurs in several ways: the infiltrating tumor cells stretch the muscle fibers; once stretched beyond double their normal length, contracting ability is lost; the infiltrating tumor cells invade and obstruct the lymphatic and vascular channels, resulting in anoxia of the muscle fibers which become necrotic;

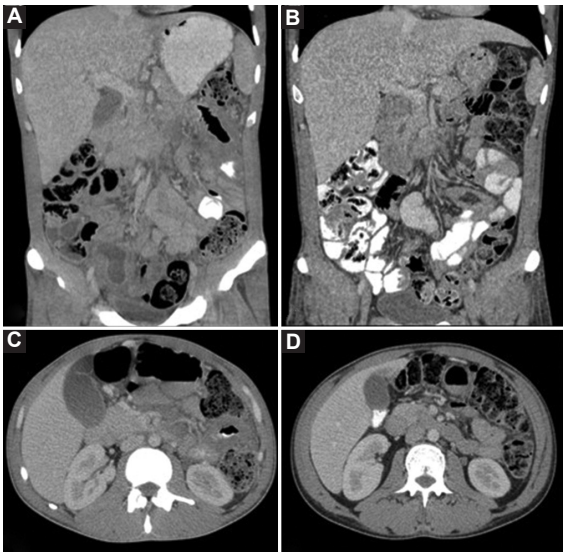

Figure 2. A 23-year-old male with aneurysmal dilatation of the small bowel. Computed tomography of the abdomen **(A and B)** coronal and axial soft tissue window 2 months after chemotherapy. **(C and D)** Coronal and axial soft tissue window 5 months after chemotherapy.

and the necrotic epithelial lining is sloughed off as bowel content passes through the lumen[9,10]. The loss of necrotic tissue surrounding the lumen eventually creates a cavity. In the end, the aneurysmal dilatation is caused by this enlarged lumen and weakened muscles which cannot contract against the intra luminal pressure[7].

Originally thought to be pathognomonic for lymphoma, subsequent reports had described similar findings with GI stromal tumor, leiomyosarcoma, amyloidosis, primary adenocarcinoma, and metastasis[11,12].

Most reported cases have been diagnosed after surgical resection of the affected segments of small bowel. In our patient, endoscopic and percutaneous studies permitted histologic confirmation of lymphoma involvement.

Surgical management of invagination and extensive aneurysmal dilation was risky; thus, conservative treatment and chemotherapy were favored over surgery.

Conclusion

Aneurismal dilation of the small bowel is an infrequent radiologic pattern mostly associated with intestinal lymphoma. We described a case of young men with representative features in which medical management improved symptoms. Follow-up studies revealed persistent dilation despite bowel thickening.

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Conflicts of interest

The authors declare that there is no conflict of interest.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

References

1. Inada R, Fukata N, Ito T, Hamada M. A case of aneurysmal lymphoma of the small intestine. Jpn J Clin Oncol. 2016;46:288-9.
2. Leshchinskiy S, Ali N, D'Agostino R. The small bowel "aneurysm". Abdom Radiol (NY). 2018;43:3503-4.
3. Hustings N, Feyaerts F. Large B-cell lymphoma of the jejunum. J Belgian Soc Radiol. 2019;103:41.
4. Lightner AL, Shannon E, Gibbons MM, Russell MM. Primary gastrointestinal non-Hodgkin's lymphoma of the small and large intestines: a systematic review. J Gastrointest Surg. 2016;20:827-39.
5. Facundo H, Manrique ME. Linfoma primario del intestino delgado: reporte de un caso y revisión de la literatura. Rev Colomb Gastroenterol. 2017;32:65-71.
6. Horton KM, Fishman EK. Multidetector-row computed tomography and 3-dimensional computed tomography imaging of small bowel neoplasms: current concept in diagnosis. J Comput Assist Tomogr. 2004;28:106-16.
7. Sokhandon F, Al-Katib S, Bahoura L, Copelan A, George D, Scola D. Multidetector CT enterography of focal small bowel lesions: a radiological-pathological correlation. Abdom Radiol (NY). 2017;42:1319-41.
8. Urbina S, Avaria P, Hirsch M. Presentación caso radiológico 3. Rev Chil Radiol. 2016;22:52.
9. Ulusan S, Koc Z, Kayaselcuk F. Gastrointestinal stromal tumours: CT findings. Br J Radiol. 2008;81:618-23.
10. Shirwaikar TA, Schwartz M, Quigley E. Gastrointestinal lymphoma: the new mimic. BMJ Open Gastro 2019;6:e000320.
11. Ko Y, Woo JY, Kim JW, Hong HS, Yang I, Lee Y, et al. An immunoglobulin G4-related sclerosing disease of the small bowel: CT and small bowel series findings. Korean J Radiol. 2013;14:776-80.
12. Mama N, Slama A, Arifa N, Kadri K, Sriha B, Ksiaa M, et al. Duodenal adenocarcinoma presenting as a mass with aneurismal dilatation. Clin Imaging. 2014;8:205-7.