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ORIGINAL ARTICLE

Diagnostic power of 64-channel multidetector CT with three dimensional images in evaluating and staging gastric lymphoma

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KEYWORDS

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Abstract *Objectives:* To assess the diagnostic power of 64 channel multidetector CT with three-dimensional images in evaluating and staging gastric lymphoma.
Patients and methods: CT imaging of selected 30 cases with gastric lymphomas proved by histopathology was reviewed retrospectively. CT findings correlated with the pathologic types of gastric lymphoma.
Results: All the 30 cases were non-Hodgkin's lymphomas (NHL). There are two different lymphoma subtypes (diffuse large B cell lymphoma, 17 patients (56.66%) and MALT lymphoma, 13 patients (43.33%)). Primary lymphoma was detected in 6/30 cases (20%) while secondary lymphoma was detected in 24/30 cases (80%). Further staging of our patients was divided into high grade (9/30) patients and low grade (21/30) patients. Most gastric lesion was located in the antrum (29/30, 66.66%) and body of stomach (22/30, 73.33%). Gastric wall thickness ranged from 20 to 60 mm (mean 32.22 ± 14 mm). There are four different patterns of gastric involvement by lymphoma: focal (20%), diffuse thickening (33.3%), diffuse thickening and nodular pattern (33.3%), and ulcerative pattern (13.3%). 12/30 cases (40%) had regional abdominal lymphadenopathy, distant LNs enlargement was detected in 2 patients (6.6%) beneath renal hilum, splenomegaly was detected in 7 patients (7 (23.33%), and splenic focal lesion was detected in one patient (3.33%).
Conclusion: MDCT with 3D images provides valuable results regarding diagnosis and staging of gastric lymphomas.

1. Introduction

The gastrointestinal tract especially the stomach is the most common primary site of extranodal lymphoma accounting for 2–5% of gastric malignancies (1,2).

Primary gastric lymphomas are confined to the stomach and regional lymph nodes and mostly non-Hodgkin

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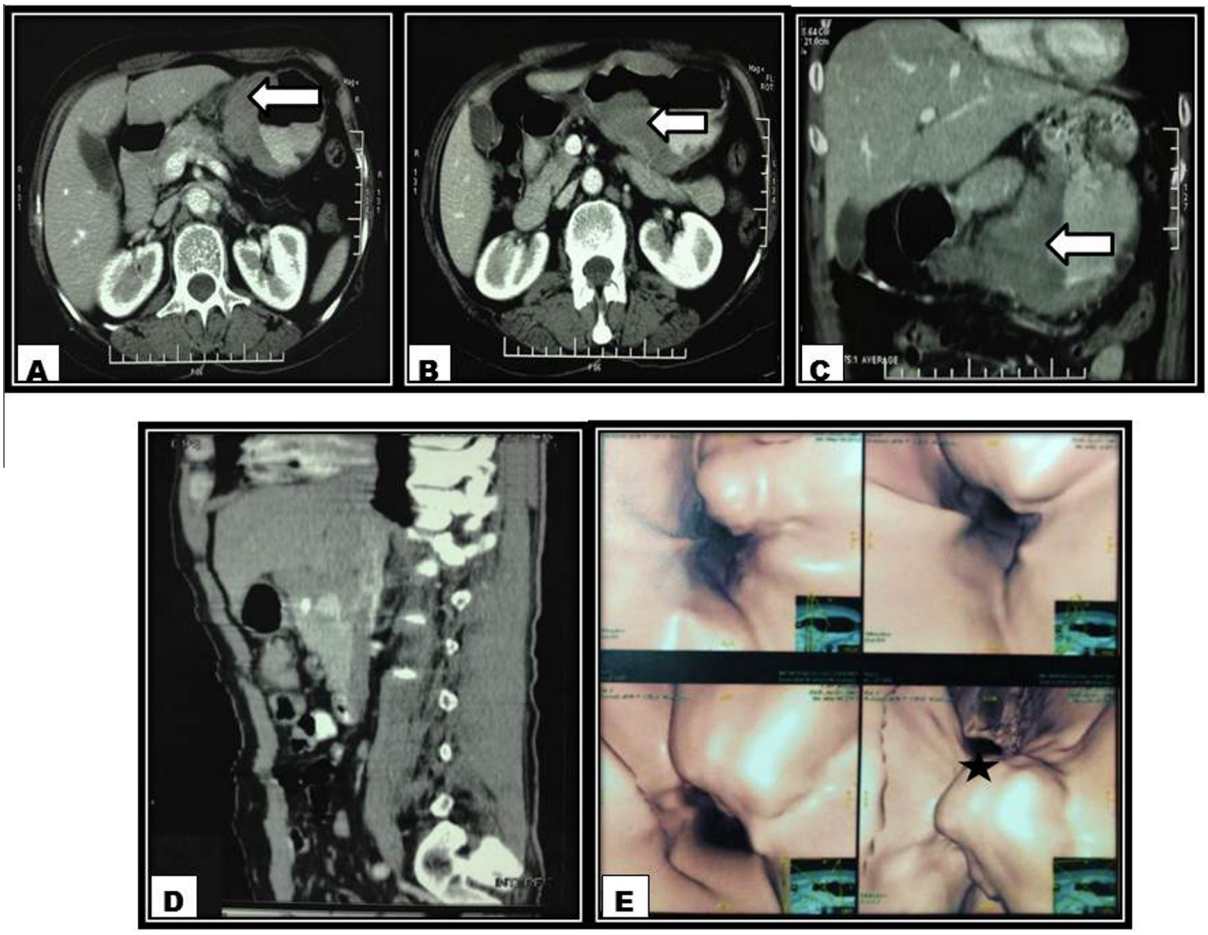

Fig. 1 Female patient 61 years presented with epigastric pain, vomiting. Negative history of *Helicobacter pylori* infection. (A and B) Axial abdominal MDCT images in porto-venous phase show circumferential soft tissue thickening (long arrows), involving body and antrum of the stomach with thickness of about 5 cm obliterating the gastric lumen. (C and D) Coronal and sagittal reformatted images of the abdomen show the extension of the lesion (long arrow). (E) Virtual gastroscopy images show narrowing of the gastric lumen and the lesion (star). Multiple small (5–7 mm) perigastric LNs. Histopathology; revealed malignant lymphoma, diffuse large B cell type.

lymphomas of B-cell origin (3). Lymphoma of mucosa-associated lymphoid tissue (MALT) is a type of extranodal lymphoma characterized by indolent clinical course and has a much better prognosis than gastric carcinoma (4). Usually there is evidence linking *Helicobacter pylori* follicular gastritis to the development of lymphomas of mucosa-associated lymphoid tissue lymphoma (MALT type) (5). Low-grade mucosa associated lymphoid tissue lymphoma (MALT) lymphoma shows diffuse infiltrate of small centrocytelike. In high-grade mucosa associated lymphoid tissue lymphoma, the large lymphoid cells transform from low-grade mucosa associated lymphoid tissue lymphoma to form clusters or sheets with or without areas of low-grade component (6,7).

Primary non-Hodgkin lymphoma (NHL) is usually unifocal, involving the antrum or fundus with decreasing frequencies while secondary gastric lymphomas typically show

Table 1 Staging of gastrointestinal lymphoma (Paris staging system).

Ann Arbor System, modified	Paris Staging system	Spread of lymphoma
I1E	T1N0M0	Mucosa, submucosa
I2E	T2N0M0	Muscularis propria, subserosa
I2E	T3N0M0	Serosa penetration
I2E	T4N0M0	Infiltration of neighboring organs
II1E	T1e4N1M0	Regional lymph nodes (compartment I + II)
II2E	T1e4N3Mo	Intra-abdominal distant lymph nodes
IIIE	T1e4N3M0	Extra-abdominal lymph nodes
IV	T1e4N0e3M1	Diffuse or disseminated infiltration of distant or extra-gastrointestinal organs
	B1	Bone marrow