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JCIMCR OPEN ACCESS Journal of Clinical Images and Medical Case Reports

ISSN 2766-7820

Case Report

Open Access, Volume 3

Gastric involvement of multiple myeloma: A case report

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Received: Jun 03, 2022
Accepted: Jul 05, 2022
Published: Jul 12, 2022
Archived: www.jcimcr.org

DOI: www.doi.org/10.52768/2766-7820/1943

Abstract

Multiple Myeloma (MM) is a neoplastic proliferation of plasma cells involving mainly bone and bone marrow. However, extra-skeletal spread in the form of plasmacytomas is also very common, which usually manifests as localized extramedullary collection of malignant Plasma cells. This paper is a report on gastric involvement of plasma cell infiltration, also known as gastric plasmacytoma.

Keywords: Multiple myeloma; Plasma cell; Neoplasm; Gastric plasmacytoma.

Abbreviations: MM: Multiple Myeloma; VTD: Velcade (Bortezomib), Thalidomide, and Dexamethasone; CT scan: Computed Tomography Scan; IgG: Immunoglobulin G; MRCP: Magnetic Resonance Cholangiopancreatography; GI: Gastro Intestinal; MALT: Mucosa-Associated Lymphoid Tissue.

Introduction

Multiple Myeloma (MM) is a clonal malignancy of Plasma cells that can result in complications such as renal impairments, osteolytic lesions, hypercalcemia, bone marrow failure, and the production of serum monoclonal protein. Although usually restricted to the bone marrow, extramedullary involvement in the form of plasmacytomas can occur in up to 20% of cases [1,2]. In this review, we report a middle-aged woman with gastric Plasmacytoma.

Case presentation

A 57 years old woman, diagnosed with MM for three months, presented with jaundice, epigastric pain, anorexia, weight loss following treatment with Velcade (Bortezomib), Thalidomide, and Dexamethasone (VTD) regimen chemotherapy. On general examination, she was found to be icteric and on abdominal examination, there was hepatosplenomegaly, otherwise, she was stable and her vital signs were within normal limits.

Blood investigations revealed an impaired liver function test

suggestive of biliary obstruction and direct hyperbilirubinemia, as shown in Table 1.

The contrast-enhanced abdominopelvic CT scan showed dilatation of the intrahepatic duct and multiple hypodense lesions, suggestive of metastases. The attempt of upper gastrointestinal endoscopy failed due to the significant stricture of the distal portion of the oesophagus. The procedure was performed using Savary dilation to bypass the narrowing which revealed at least three umbilicated lesions along the gastric body. The histopathologic examination of the biopsy samples revealed diffuse proliferation of plasma cells in gastric mucosa with marked effacement of glandular architecture. Also, the monoclonal proliferation of plasma cells was confirmed by an immunohistochemistry study. The findings were indicative of an inflammatory process consisting of both mature and immature plasma cells, using a positive stain for IgG in an immunohistochemistry study.

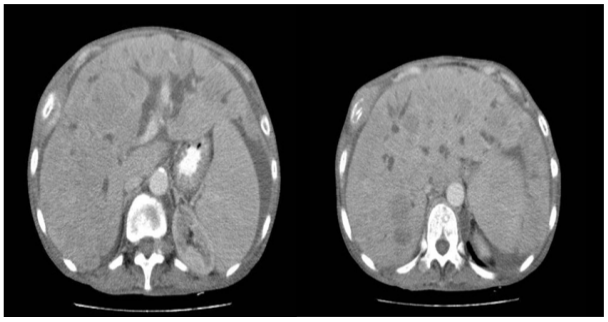

Figure 1: The contrast-enhanced abdominopelvic CT scan showing the dilatation of the intrahepatic duct and multiple hypodense lesions.

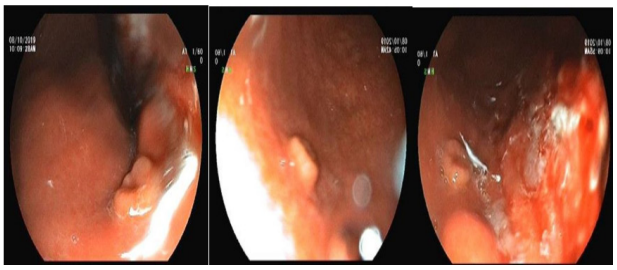

Figure 2: During the endoscopy, Savary dilation was done from 7 mm up to 9 mm. At least three umbilicated mass were seen in the proximal and distal body of the stomach.

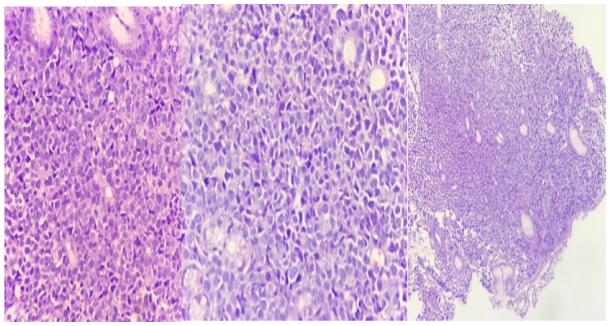

Figure 3: The histopathologic examination of the biopsy samples showing diffuse proliferation of plasma cells in gastric mucosa with marked effacement of glandular architecture.

The Magnetic Resonance Cholangiopancreatography (MRCP) was indicative of numerous mass lesions in the liver with compression of bile ducts on the hilum resulting in intrahepatic biliary dilation.

The patient was scheduled for follow up to plan the chemotherapy, however, she did not consent. She was brought to the hospital after two months due to drowsiness, she was found to be hypotensive and she eventually deceased due to hemodynamical instability despite proper intervention.

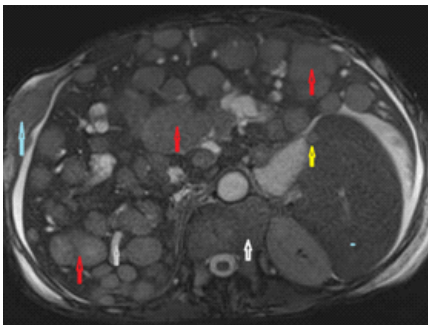

Figure 4: Axial T2 MRI. Multiple mass lesions are seen in liver, spleen, spine and abdominal wall (red, yellow, white and blue arrows). Bile ducts are dilated (pink arrow).

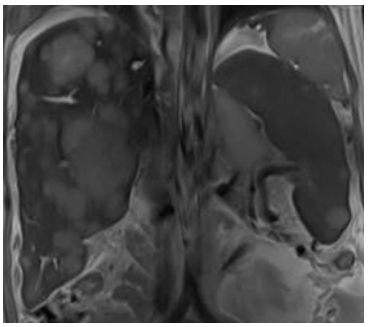

Figure 5: Coronal T2 MRI. Multiple mass lesions in enlarged liver and spleen. Cholestasis was also peresent.

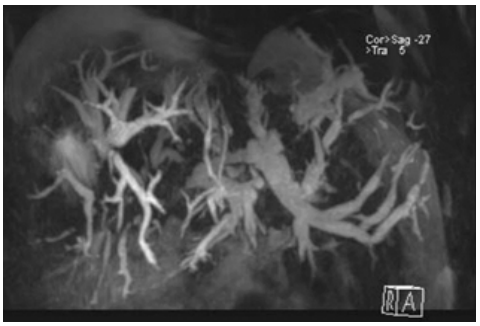

Figure 6: Thick slab image showing significant intrahepatic cholestasis.

Table 1: Laboratory data.

	Results	Range	Units
WBC	4600	4000-11000	Cells / µL
Hb	8.8	11.5-16	g/dL
Reticulocytes	6.2		%
RPI	1.7		
RBC morphology	Rouleau formation		
Platelets	55000	150000-450000	Cells / µL
ESR	125		m.m/h
CRP	54		Mg/L
Na	130	136-145	mEq/L
K	4.3	3.5-5.3	mEq/L
Ca	8.6		
Phosphorus	2.0		
AST	332	1-43	IU/L
ALT	134	1-40	IU/L
Bilirubin (direct)	11.35	Less than 0.3	mg/dL
Bilirubin (indirect)	16.51	0.1 – 1.6	mg/dL
Alkaline phosphatase	1557	64-306	IU/L
Creatinine	0.5	0.6-1.2	mg/dL
Blood sugar	76	70-99	mg/dL
CPK	57	10-70	U/L
LDH	7760	Less than 240	U/L
Albumin	2	3.5 – 5.5	g/dL
Amylase	55	23-85	U/L
Lipase	17	0 – 160	U/L

Discussion

Plasmacytomas are an extra-skeletal accumulation of monoclonal plasma cells occurring in almost 20% of the patients with multiple myeloma [3]. This process can either be primary (true), such as solitary plasmacytoma of bone also known as solitary extramedullary plasmacytoma, without signs of bone involvement, or in association with multiple myeloma, representing an extraskeletal spread of the disease itself [3,4].

As the extraskeletal evidence of multiple myeloma occur more frequently than it is currently recognized, the involvement of the guts is under-reported. The few existing studies suggest the small bowel as the most common involved segment, followed by the esophagus, stomach and colon [5-8].

Patients with gastric Plasmacytoma mostly present with nonspecific gastrointestinal symptoms such as epigastric pain, weight loss, and upper GI bleeding [6-9].

The histopathologic investigations have shown that gastric myeloma is thought to originate from lymphoid follicles in the submucosa, or plasma cells in the submucosa or lamina propria [10].

Endoscopically, gastric plasmacytomas may appear as discrete ulcers, ulcerated masses, thickened gastric folds, multiple polyps, small plaques, or diffuse infiltrative lesions resembling linitis plastics of the stomach [5,9,11-15]. Thus, the endoscopic appearance of plasmacytomas varies significantly but is simultaneously similar to other more common conditions such as poorly differentiated or metastatic neoplasms, lymphoma (particularly MALT lymphoma) and gastrointestinal amyloidosis. Hence, the pathological and immunohistochemical examination of endoscopic biopsies is crucial in making an accurate diagnosis [5].

Conclusion

In conclusion, although being rare, the possibility of gastric involvement of plasma cells must be taken into consideration in addition to more common etiologies upon assessing a patient diagnosed with Multiple Myeloma who presents with nonspecific gastrointestinal symptoms.

Conflict of interest: The authors declare no conflict of interest.

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