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Case Report

Gastrointestinal involvement in a patient with multiple myeloma: A case report

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SUMMARY

Multiple myeloma is a neoplastic proliferation of monoclonal plasma cells. Although usually restricted to the bone marrow, extraskeletal spread in the form of plasmacytomas which represent localized extramedullary collections of malignant plasma cells can occur in a significant number of patients. However, symptomatic gastrointestinal involvement in multiple myeloma is uncommon and overt gastrointestinal haemorrhage from plasmacytomas is rarely reported. We report a case of gastrointestinal bleeding manifested as melaena in a patient with a known diagnosis of multiple myeloma. Endoscopic and radiologic studies revealed multiple gastric plasmacytomas with evidence of recent bleeding as well as duodenal, colonic and hepatic lesions. The patient was managed conservatively with no evidence of recurrent bleeding. The features of gastrointestinal plasmacytomas are also reviewed.

Key words: multiple myeloma, plasmacytoma, gastrointestinal bleeding

INTRODUCTION

Multiple myeloma (MM) is a clonal malignancy of plasma cells that can result in renal impairment, 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] However, symptomatic gastrointestinal involvement in the course of multiple myeloma has rarely been reported. We report a case of multiple myeloma with gastroduodenal, hepatic and colonic plasmacytomas complicated with upper gastrointestinal bleeding manifested as melaena.

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CASE REPORT

A 75-year-old man was transferred to our department from the haematology department because of melaena. He had been diagnosed with IgA-kappa multiple myeloma two weeks ago and was about to undergo chemotherapy. The diagnosis of MM was based on the presence of serum monoclonal protein, clonal bone marrow plasma cells and lytic bone lesions. His medical history also included type 2 diabetes and coronary artery disease. He was on a sulphonylurea and low dose aspirin (100 mg/day).

On admission to our department, he was haemodynamically stable and appeared to be in no acute distress. Physical examination revealed an enlarged non-tender liver which was palpable 5 cm below the costal margin. The rest of the examination was unremarkable and a digital examination at that time did not reveal bloody stools or melaena; however stools were positive for occult blood.

Laboratory studies disclosed the following: haematocrit 29.4%, haemoglobin 9.8 g/dl, leucocyte count 5.200/μl, platelet count 181.000/μl, erythrocyte sedimentation rate 85 mm/1h, urea 67 mg/dl, serum creatinine 1.3 mg/dl, aspartate aminotransferase 20 U/l, alanine aminotransferase 13 U/l, alkaline phosphatase 83 U/l, γGT 124 U/l, bilirubin 2.5 mg/dl, lactate dehydrogenase 239 U/l, calcium 8.8 mg/dl, C-reactive protein 24.5 mg/l, serum β2-micro-

Abbreviations:

MM= multiple myeloma
GI=gastrointestinal

globulin 6.13 mg/l, serum IgA 11.5 g/l, serum IgG 4.78 g/l and serum IgM 0.43 g/l. All coagulation parameters were within normal limits and serum electrophoresis and immunofixation showed a monoclonal IgA kappa band.

Upper GI endoscopy revealed multiple, sessile, friable, umbilicated and ulcerated polypoid lesions in the gastric body and antrum ranging 10 to 20 mm in diameter (Figures 1,2). A 10 mm and a 15 mm sessile lesion were also found in the duodenal bulb and the descending part of the duodenum, respectively (Figure 3). A few small blood clots were present in the stomach but no active bleeding or visible vessels were identified and therefore, no endoscopic treatment was undertaken. Biopsies were obtained and histopathological examination revealed marked mucosal infiltration by plasma cells (Figure 4) which stained positive for IgA kappa light chains (Figure 5) and negative for CD20, findings consistent with plasmacytomas.

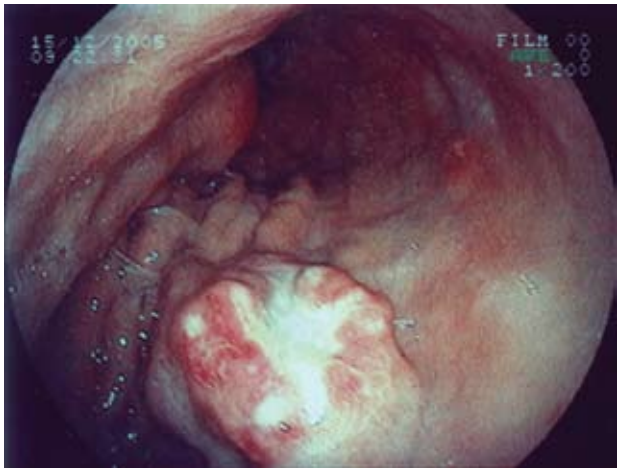

Figure 1. Endoscopic image demonstrating an ulcerated plasmacytoma in the gastric body.

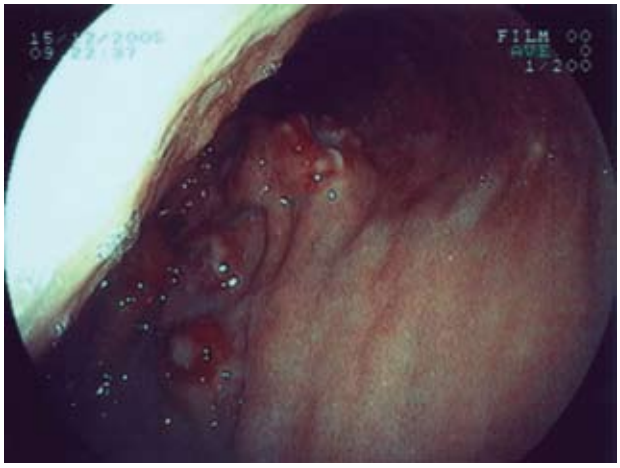

Figure 2. Endoscopic image demonstrating multiple plasmacytomas in the gastric body.

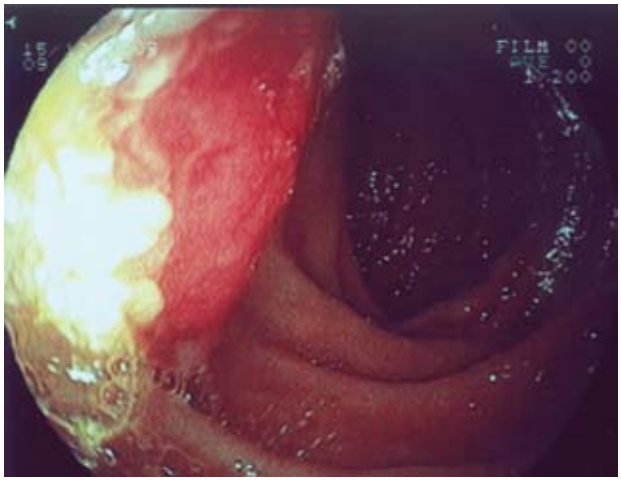

Figure 3. Endoscopic image demonstrating a sessile plasmacytoma in the 2nd part of the duodenum

Computed tomography of the abdomen demonstrated multiple hypodense focal lesions in the liver and a probable luminal stenosis in the sigmoid colon. Fine needle biopsy of the hepatic lesions revealed extensive infiltration with atypical plasma cells consisted with metastatic deposits of multiple myeloma. At sigmoidoscopy a 3 cm polypoid mass was found in the distal sigmoid colon (Figure 6) which was also histopathologically proven to be a plasmacytoma.

The patient was managed conservatively with oral proton-pump inhibitors and general supportive care, with no

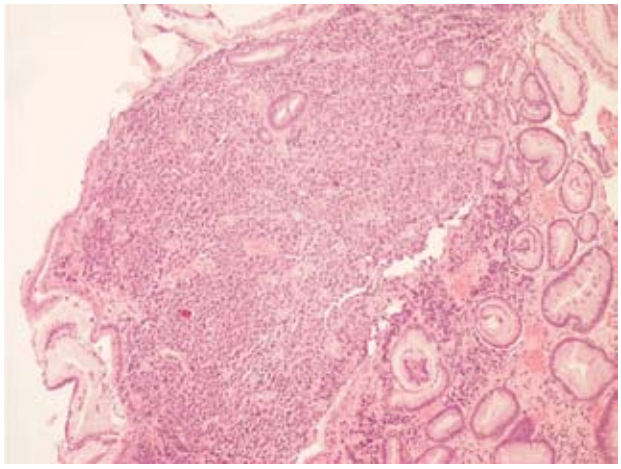

Figure 4. Photomicrograph showing extensive infiltration of the gastric mucosa by atypical plasma cells (H&E, X200).

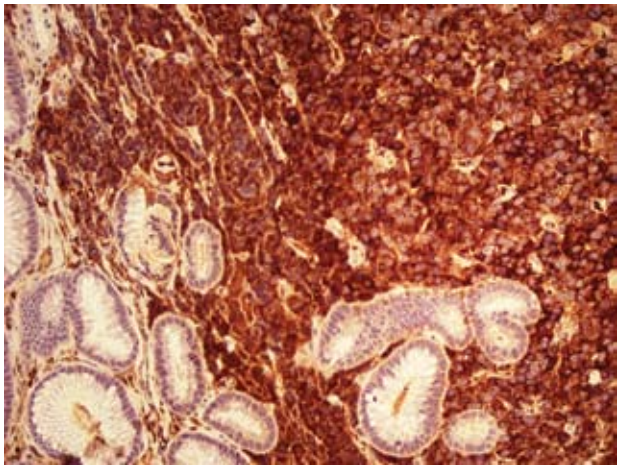

Figure 5. Immunohistochemically stained kappa light-chains showing monoclonality of plasma cells (X300).

signs of recurrent bleeding in the following days. He was subsequently transferred back to the haematology department were he was treated with systemic chemotherapy (vincristine/doxorubicin/dexamethasone). Unfortunately, he died one month later due to sepsis.

DISCUSSION

Plasmacytomas are localized collections of neoplastic monoclonal plasma cells that form masses in bone or other organs. Plasmacytomas can be either primary, without signs of bone marrow involvement such as solitary plasmacytoma of bone or solitary extramedullary plasmacytoma, or may occur in association with multiple myeloma representing extraskeletal spread of the disease.

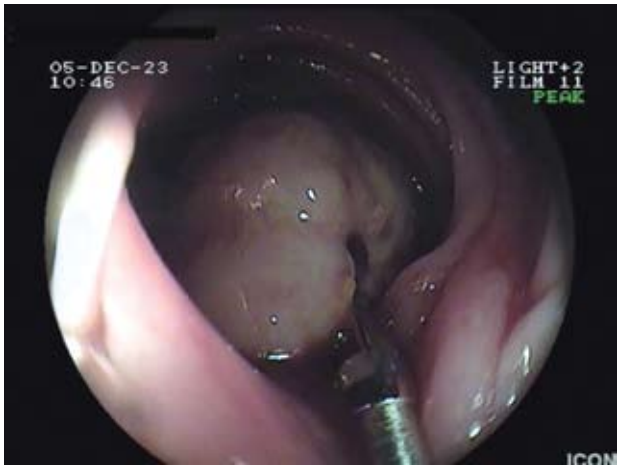

Figure 6. Endoscopic image demonstrating a polypoid plasmacytoma in the sigmoid colon.

The most common site of solitary extramedullary plasmacytomas is the upper aerodigestive track, including the oropharynx, nasopharynx, nasal cavity, sinuses and larynx. Gastrointestinal plasmacytomas are rare, accounting for approximately 7% of all solitary extramedullary plasmacytomas.[3,4] Every part of the GI track can be affected, but the sites most frequently involved are the small bowel and the stomach, occasionally the colon, and rarely the esophagus.[1,2] Gastrointestinal plasmacytomas in the course of MM are also rare. In a recent large retrospective study of 2.584 MM patients only 24 (0.9%) patients with gastrointestinal involvement were indentified.[5] GI involvement at the time of the initial diagnosis of MM was much rarer than later in the course of the disease and when present was usually associated with rapid progression of the disease and a dismal prognosis.[5] In another series of 57 autopsied MM patients only 6 cases of macroscopic GI involvement were found; 3 with liver and 3 with pancreatic lesions.[6]

The presenting symptoms of gastrointestinal plasmacytomas depend on the site and extent of involvement. Gastric plasmacytomas may present with anorexia, weight loss, nausea, abdominal pain, vomiting, occult blood loss and rarely with overt gastrointestinal bleeding.[1,2,7-9] Intestinal obstruction may be the presenting symptom in colonic or small bowel involvement and dysphagia is commonly reported in the rare cases of oesophageal involvement.[10-12]

Endoscopically, gastric plasmacytomas may appear as discrete ulcers, ulcerated masses, thickened gastric folds, multiple polyps, small plaques or diffuse infiltrative lesions resembling linitis plastica.[1,2,9,13-16] Thus, as the endoscopic appearance of plasmacytomas varies significantly and may be similar to other more common conditions such as poorly differentiated or metastatic neoplasms, lymphoma (particularly MALT lymphoma) and gastrointestinal amyloidosis, pathological and immunohistochemical examination of endoscopic biopsies is crucial for making an accurate diagnosis.[16]

Solitary primary gastrointestinal plasmacytomas can be treated with surgical resection. However, as plasma cell tumours are radiosensitive, radiotherapy has also been used either alone or in combination with surgical excision, with excellent results. Reports on additional chemotherapy for solitary plasmacytomas are conflicting; it may be valuable for large or poorly differentiated tumours, or invasive behaviour.[17] However, others have suggested that it is not curative and does not prevent progression to myeloma.[18] Complete regression of early stage primary gastric plasmacytomas after successful Helicobacter pylori eradica-

tion has also been reported in a small number of patients.[19] Nevertheless, after any successful initial treatment, progression of solitary plasmacytomas to multiple myeloma is possible and long term follow-up is necessary.[3]

Surgical treatment of gastrointestinal plasmacytomas in MM patients is best reserved for complications such as uncontrollable or recurrent bleeding and obstruction.[11,13.] Endoscopic treatment of bleeding gastrointestinal tumors is often initially successful in controlling active bleeding; however, rebleeding from the treated site is common as the friable malignant tissue does not heal properly.[8] Radiation therapy is effective for local control of MM and has been reported to control bleeding and alleviate symptoms in gastric plasmacytomas.[1,9,14] Angiographic embolization has been successfully used to control recurrent bleeding in a case of duodenal plasmacytoma resistant to radiation.[20]

However, as MM is a systemic disease, a more aggressive approach is usually required. High-dose chemotherapy followed by stem-cell transplantation is the standard treatment for symptomatic MM patients but the prognosis of MM patients with GI involvement is poor even after such aggressive treatment.[5,8] Bortezomib, a selective proteasome inhibitor, has been recently introduced for the treatment of multiple myeloma and there has been a recent report of successful treatment of a solitary gastric plasmacytoma with this agent.[21]

In conclusion, our case demonstrates that although gastrointestinal plasmacytomas are rare, they must be considered in the differential diagnosis of patients with gastrointestinal bleeding, especially those with a history of multiple myeloma. Prompt endoscopic evaluation may help in the initial management, offer a definite histological diagnosis and help guide further therapeutic interventions.

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