

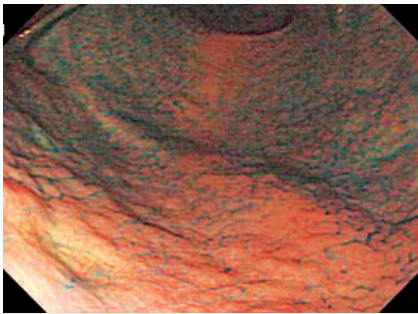
## Overt bone marrow metastasis from early gastric cancer

We report here a rare case of early gastric cancer associated with overt bone marrow metastasis in the form of osteoblastic lesions.

A 71-year-old man was referred to the Department of Internal Medicine because of an incidental finding of anemia and in-

creased alkaline phosphatase. The patient had no specific medical history and his laboratory results showed his hemoglobin level to be 9.2 g/dL and his alkaline phosphatase to be 2366 IU/L. It was concluded that his anemia was due to chronic illness. Gastroscopy was performed and

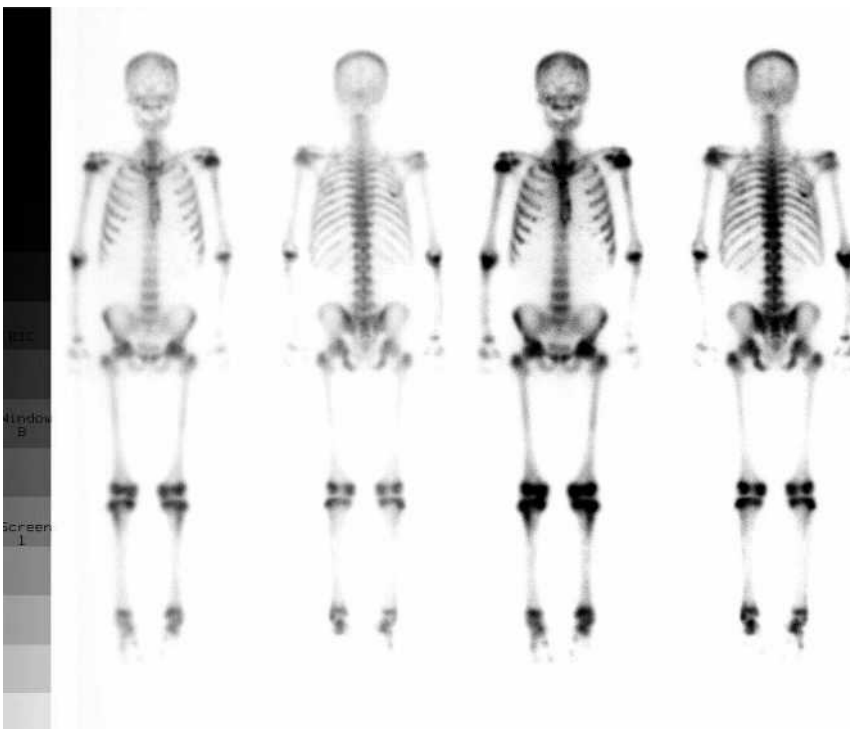
four flat erosions were found at the greater curvature and anterior wall of the antrum (● Fig. 1), which were biopsied. No abnormalities were found in the stomach or in any other organs on abdominal computed tomography (● Fig. 2). Bone scintigraphy showed increased uptake, especially in the diaphyses of the long bones (● Fig. 3). The endoscopic biopsy was reported as showing signet ring cell carcinoma (● Fig. 4), and signet ring cells were also found in a bone marrow biopsy. The patient was eventually diagnosed with early gastric cancer with bone marrow metastasis (● Fig. 5).



**Fig. 1** Endoscopic image showing the small flat erosions seen at the greater curvature of the antrum.



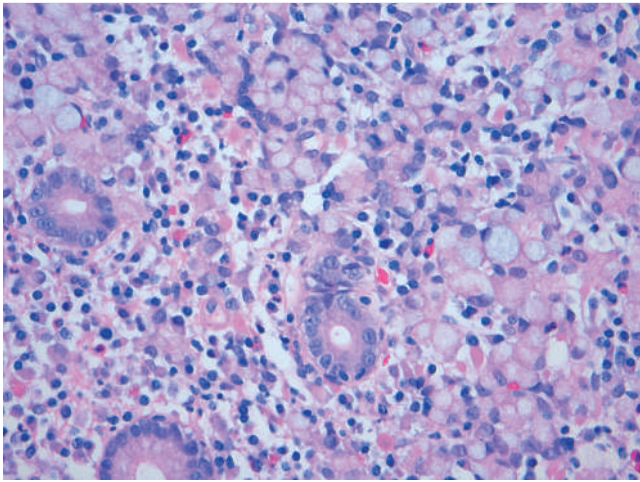
**Fig. 2** Abdominal computed tomography showed no signs of lymph node invasion around the stomach.



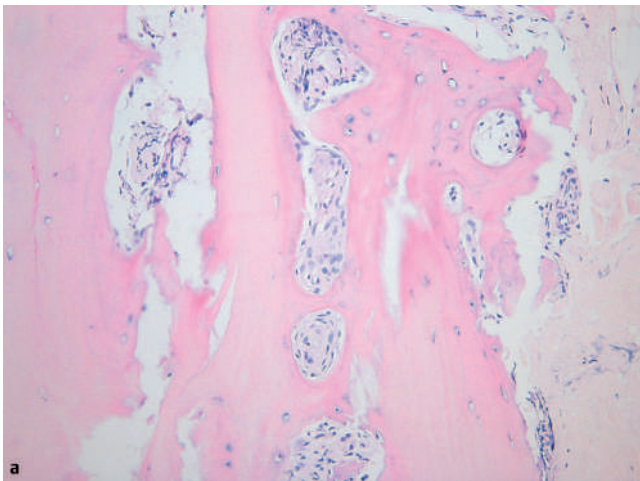
**Fig. 3** Bone scintigraphy showed increased uptake in the long bone diaphyses.

Bone metastasis is common in patients with advanced cancers of the breast, lung, and prostate, but not in patients with stomach cancer [1]. Distant metastasis has rarely been reported in patients with early gastric cancers, and bone metastases from stomach cancer are usually osteolytic lesions [2]. Only 46 cases of early gastric cancer with bone metastasis had been reported in Japan up to 2003. Among these, only 14 patients showed evidence of bone metastasis at the time of diagnosis; 56% had lymph node spread [3]. In our case, no typical signs of early gastric cancer were found during endoscopy, when only erosions were seen, and no enhancement of the stomach wall was seen on computed tomography. Our case can be considered as very unusual because the patient had osteoblastic bone involvement without any spread to other organs or lymph nodes.

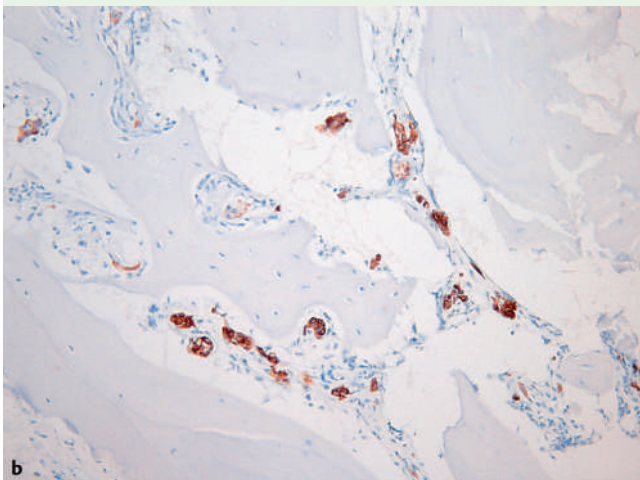
Endoscopy\_UCTN\_Code\_CCL\_1AB\_2AD\_3AB



**Fig. 4** Histological view of the biopsy tissue obtained at endoscopy, showing multiple signet ring cells.



**Fig. 5** Bone marrow biopsy revealed multiple signet ring cells (a), that stained positively for cytokeratin (b).



S. H. Kang<sup>1</sup>, J. I. Kim<sup>1</sup>, H. S. Moon<sup>1</sup>,  
H. M. Kang<sup>1</sup>, S. H. Kim<sup>1</sup>, J. K. Seong<sup>1</sup>,  
B. S. Lee<sup>1</sup>, H. Y. Jeong<sup>1</sup>, K. S. Song<sup>2</sup>,  
S. M. Noh<sup>3</sup>, K. S. Shin<sup>4</sup>, J. S. Cho<sup>4</sup>

<sup>1</sup> Department of Internal Medicine, Chung Nam University Hospital, Daejeon, Korea

<sup>2</sup> Department of Pathology, Chung Nam University Hospital, Daejeon, Korea

<sup>3</sup> Department of Surgery, Chung Nam University Hospital, Daejeon, Korea

<sup>4</sup> Department of Diagnostic Radiology, Chung Nam University Hospital, Daejeon, Korea

## References

- 1 Kobayashi M, Okabayashi T, Sano T, Araki K. Metastatic bone cancer as a recurrence of early gastric cancer: characteristics and possible mechanisms. *World J Gastroenterol* 2005; 11: 5587–5591
- 2 Kusumoto H, Haraguchi M, Nozuka Y et al. Characteristic features of disseminated carcinomatosis of the bone marrow due to gastric cancer: the pathogenesis of bone destruction. *Oncol Rep* 2006; 16: 735–740
- 3 Kobayashi M, Araki K, Matsuura K et al. Early gastric cancer giving rise to bone and brain metastases: a review of the Japanese literature. *Hepatogastroenterology* 2002; 49: 1751–1754

## Bibliography

DOI 10.1055/s-2007-966860  
*Endoscopy* 2008; 40: E34–E35

© Georg Thieme Verlag KG Stuttgart · New York · ISSN 0013-726X

## Corresponding author

**H. Y. Jeong, MD**

Department of internal Medicine  
Chung Nam University College of Medicine  
Dae Sa Dong 640

Daejeon

South Korea

Fax: + 82-42-254-4553

Jeonghy@cnu.ac.kr