

## Long-term disease-free survival after surgical resection for multiple bone metastases from rectal cancer

Seok Jin Choi, Jong Hun Kim, Min Ro Lee, Chang Ho Lee, Ja Hong Kuh, Jung Ryul Kim

Seok Jin Choi, Jong Hun Kim, Min Ro Lee, Chang Ho Lee, Department of Surgery, Chonbuk National University Medical School, Jeonju 561-180, South Korea

Ja Hong Kuh, Department of Chest Surgery, Chonbuk National University Medical School, Jeonju 561-180, South Korea

Jung Ryul Kim, Department of Orthopedic Surgery, Chonbuk National University Medical School, Jeonju 561-180, South Korea  
Author contributions: Choi SJ, Kim JH, Lee MR and Lee CH collected data and performed the research; Kim JH, Kuh JH and Kim JR contributed to the work, with surgical sides; Choi SJ wrote the paper.

Correspondence to: Min Ro Lee, MD, Professor, Department of Surgery, Chonbuk National University Medical School, San 2-20 Geumam-dong, Deokjin-gu, Jeonju, Jeollabukdo 561-180, South Korea. [gsmiro@jbnu.ac.kr](mailto:gsmiro@jbnu.ac.kr)

Telephone: +82-63-2501570 Fax: +82-63-2716197

Received: March 29, 2011 Revised: July 6, 2011

Accepted: July 13, 2011

Published online: August 10, 2011

Anatomic Pathology, Department of Critical Care Medicine and Surgery, Viale G. B. Morgagni 85, 50134, Florence, Italy

Choi SJ, Kim JH, Lee MR, Lee CH, Kuh JH, Kim JR. Long-term disease-free survival after surgical resection for multiple bone metastases from rectal cancer. *World J Clin Oncol* 2011; 2(8): 326-328 Available from: URL: <http://www.wjgnet.com/2218-4333/full/v2/i8/326.htm> DOI: <http://dx.doi.org/10.5306/wjco.v2.i8.326>

### Abstract

Bone metastasis of primary colorectal cancer is uncommon. When it occurs, it is usually a late manifestation of disease and is indicative of poor prognosis. We describe a patient with multiple metachronous bone metastases from lower rectal cancer who was successfully treated with multimodal treatment including surgical resections and has shown 32 mo disease-free survival. Surgical resection of metastatic bone lesion(s) from colorectal cancer may be a good treatment option in selected patients.

© 2011 Baishideng. All rights reserved.

**Key words:** Bone metastasis; Colorectal cancer; Surgical resection

**Peer reviewers:** Chih-Hsin Tang, PhD, Associate Professor, Department of Pharmacology, School of Medicine China Medical University, No.91 Hsueh-Shih Road, Taichung 40421, Taiwan, China; Alessandro Franchi, MD, Associate Professor, Division of

### INTRODUCTION

Bone metastasis from colorectal cancer is usually a late manifestation of disease and is indicative of poor patient prognosis<sup>[1-8]</sup>. The median survival of patients with bone metastases from colorectal cancer is usually less than 10 mo<sup>[2,3,5]</sup>. Here, we describe a patient with multiple bone metastases from lower rectal cancer who was successfully treated with multimodal treatment including surgical resections.

### CASE REPORT

A 58-year-old male patient presented with stool caliber change and blood per rectum for 2 mo. Digital examination revealed an annular lesion in the lower rectum, and biopsies confirmed moderately differentiated adenocarcinoma. Computed tomography (CT) and whole body bone scans revealed a circumferential mass in the lower rectum. Metastatic lesions were not detected. His serum carcinoembryonic antigen (CEA) concentration was within the normal range. In May 2005, he underwent a lower anterior resection, followed by systemic infusion of 5-fluorouracil.

Twenty-eight months after initial treatment, a pulmonary metastasis 2 cm in diameter was found in the left lower lung. The patient underwent a left lower lobectomy, followed by 5 cycles of FOLFOX chemotherapy. In June 2008, 9 mo after the lobectomy, follow up radiology revealed two bony metastases, 5 cm and 2 cm in

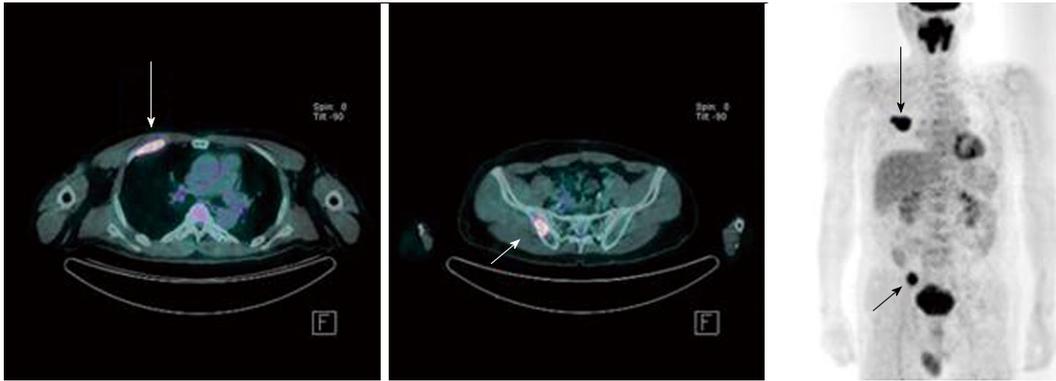


Figure 1 Preoperative whole body positron emission tomography computed tomography showing hypermetabolic metastatic lesions in the right third rib (long arrows) and right iliac bone (short arrows).

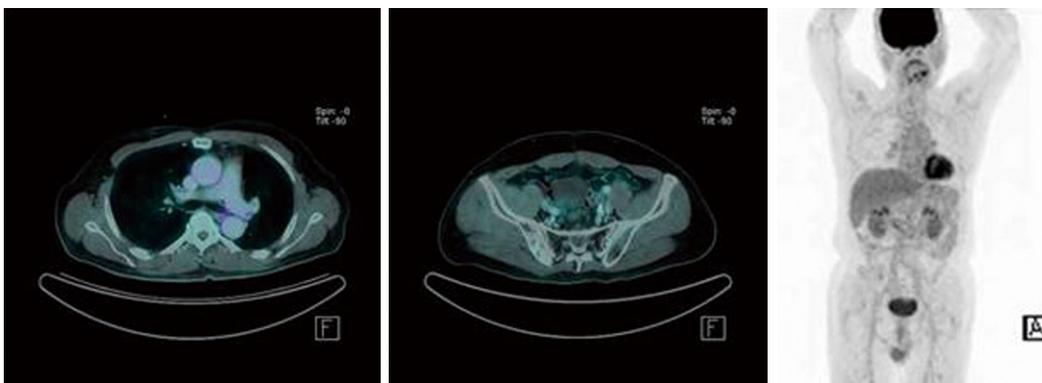


Figure 2 Recent whole body positron emission tomography computed tomography showing no evidence of hypermetabolic lesions 25 mo after surgical resection.

diameter, in the right third rib and right iliac bone, respectively (Figure 1). His serum CEA concentration was 61.3 ng/mL (normal, < 5.0 ng/mL). He underwent a palliative excision of the metastatic rib tumor due to rib pain, followed by radiation therapy (3000 cGy in 10 fractions) for the iliac bone lesion and 3 cycles of capecitabine therapy. In September 2008, we performed an intraoperative radiofrequency ablation on the right iliac bone lesion with curative intent. Recent CT, bone scan, and positron emission tomography/CT showed no evidence of recurrence (Figure 2). The patient remains disease-free more than 32 mo after diagnosis of bone metastases.

## DISCUSSION

Bone metastasis from colorectal cancer is a rare (4%-6%) and late manifestation of the disease that is associated with poor patient prognosis<sup>[1-8]</sup>. The 5-year survival rate of colon cancer patients with bone metastases is 8.1%<sup>[4]</sup>, and median survival is usually less than 10 mo<sup>[2,3,5]</sup>.

Over the past three decades, resection of liver metastases from colorectal cancer has been recognized as beneficial in selected patients. More recently, resection of isolated pulmonary metastases has been found to enhance long-term survival in selected patients<sup>[9-11]</sup>.

In addition, surgical resection of isolated metastatic

bone lesion(s) has been shown to be a good treatment option, generally resulting in prolonged survival<sup>[12,13]</sup>.

Our patient remains disease-free more than 32 mo after diagnosis of bone metastases. To our knowledge, no previous case reports have shown disease-free survival of more than 12 mo after surgical resection of multiple metastatic bone lesions from rectal cancer, except for patients with acrometastases (metastases to the hand or foot)<sup>[14]</sup>. Although, treatment must be individualized, with only certain patients fit for surgery able to undergo surgical removal of these metastatic lesions, and other effective treatment modalities, the findings in our patient suggest that surgical resection is both beneficial and effective for bone metastases from colorectal cancer. Hopefully, this option will help patients with metastatic bone lesion(s) not only from colorectal cancer but from other cancers. Further evidence and data are needed to define the role and indication of surgical resection of metastatic bone lesion(s), especially from colorectal cancer.

## REFERENCES

- 1 **Kanthan R**, Loewy J, Kanthan SC. Skeletal metastases in colorectal carcinomas: a Saskatchewan profile. *Dis Colon Rectum* 1999; **42**: 1592-1597
- 2 **Nozue M**, Oshiro Y, Kurata M, Seino K, Koike N, Kawa-

- moto T, Taniguchi H, Todoroki T, Fukao K. Treatment and prognosis in colorectal cancer patients with bone metastasis. *Oncol Rep* 2002; **9**: 109-112
- 3 **Bonnheim DC**, Petrelli NJ, Herrera L, Walsh D, Mittelman A. Osseous metastases from colorectal carcinoma. *Am J Surg* 1986; **151**: 457-459
- 4 **O'Connell JB**, Maggard MA, Ko CY. Colon cancer survival rates with the new American Joint Committee on Cancer sixth edition staging. *J Natl Cancer Inst* 2004; **96**: 1420-1425
- 5 **Patanaphan V**, Salazar OM. Colorectal cancer: metastatic patterns and prognosis. *South Med J* 1993; **86**: 38-41
- 6 **Roth ES**, Fetzer DT, Barron BJ, Joseph UA, Gayed IW, Wan DQ. Does colon cancer ever metastasize to bone first? a temporal analysis of colorectal cancer progression. *BMC Cancer* 2009; **9**: 274
- 7 **Ellington JK**, Kneisl JS. Acrometastasis to the foot: three case reports with primary colon cancer. *Foot Ankle Spec* 2009; **2**: 140-145
- 8 **Delva R**, Pein F, Lortholary A, Gamelin E, Cellier P, Larra F. [Bone metastases of colorectal cancers: apropos of 8 cases]. *Rev Med Interne* 1993; **14**: 223-228
- 9 **Nakatsu H**, Hazama S, Oka M. [A case of long-term disease free survival after three surgical resections for local recurrence and lung metastases from rectal cancer]. *Gan To Kagaku Ryoho* 2008; **35**: 2153-2155
- 10 **Kim AW**, Faber LP, Warren WH, Saclarides TJ, Carhill AA, Basu S, Choh MS, Liptay MJ. Repeat pulmonary resection for metachronous colorectal carcinoma is beneficial. *Surgery* 2008; **144**: 712-717; discussion 717-718
- 11 **Villeneuve PJ**, Sundaresan RS. Surgical management of colorectal lung metastasis. *Clin Colon Rectal Surg* 2009; **22**: 233-241
- 12 **Gallagher DJ**, Kemeny N. Metastatic colorectal cancer: from improved survival to potential cure. *Oncology* 2010; **78**: 237-248
- 13 **Scuderi G**, Macrì A, Sfuncia G, Fedele F, Crescenti F, Versaci A, Altavilla G, Famulari C. Sternal metastasis as initial presentation of a unknown rectal cancer. *Int J Colorectal Dis* 2004; **19**: 292-293
- 14 **Gamblin TC**, Santos RS, Baratz M, Landreneau RJ. Metastatic colon cancer to the hand. *Am Surg* 2006; **72**: 98-100

S- Editor Tian L L- Editor Webster JR E- Editor Zheng XM