Sacral metastasis as a presentation of colonic adenocarcinoma

William T H Gelson¹ Martin J Rimmer²
William Landells³ Andrew C Douds⁴

J R Soc Med 2007;100:191–192

Presentation of colonic adenocarcinoma with bony metastasis is rare and associated with a poor prognosis.

CASE REPORT

A 71-year-old gentleman presented with a five-day history of excruciating left leg pain. Examination revealed an absent left ankle jerk and fasciculation of the left gastrocnemius muscle. He had no other complaints and examination was otherwise normal.

Initial investigations found an erythrocyte sedimentation rate of 75 mm/h, corrected calcium of 10.8 mg/dL (2.7 mmol/L), alkaline phosphatase of 211 IU/L (3.5 nkat/L) and albumin of 2.4 g/dL (24 g/L). Chest radiograph was unremarkable. Magnetic resonance imaging demonstrated an infiltrating osteosclerotic sacral tumour extending to and impinging upon the S1 nerve root (Figure 1). Biopsy of this lesion showed a moderately differentiated adenocarcinoma with lower gastrointestinal tract morphology (Figure 2). Carcinoembryonic antigen was strongly positive (3618 ng/mL [3618 g/L]). Both prostate specific antigen and carbohydrate antigen 19–9 were normal. Computer tomographic (CT) scanning revealed a large sigmoid tumour (Figure 3) with hepatic and pulmonary metastases.

Our patient deteriorated rapidly and died peacefully at home one month after presentation. His leg pain had responded well to sacral radiotherapy.

To our knowledge, this is the first case report to describe adenocarcinoma of the colon presenting with symptoms from a sacral metastatic deposit.

DISCUSSION

It is rare for skeletal metastases of unknown primary to have a colonic origin. Only three case series of patients presenting with skeletal metastases exist.^{1–3} In total, 133

¹Department of Medicine, Box 210, Addenbrooke's Hospital, Cambridge;

²Department of Radiology, ³Department of Pathology, and ⁴Department of Medicine, Queen Elizabeth Hospital, King's Lynn

Correspondence to: A C Douds

E-mail: andrew.douds@qehkl.nhs.uk

(a)

(b)

Figure 1 Magnetic resonance imaging showing an infiltrating osteosclerotic sacral tumour extending to and impinging upon the S1 nerve root.

patients are included. The origin is determined either ante- or post-mortem in 119 of these (89%). Only two patients (1.5%) had carcinoma of the colon, while 59 (44%) had carcinoma of the lung, 14 (11%) had carcinoma of the prostate, 8 (6%) had carcinoma of the breast, 8 (6%) had carcinoma of the kidney and 7 (5%) had hepatocellular carcinoma. When the origin is found to be colonic, the five-year survival is between 16% and 38%.⁴ Average survival from presentation with bony metastases is 12 months.¹

Colonic carcinoma metastasizes to bone by haematogenous spread. Of 1541 post mortem examinations from

Figure 2 Biopsy of sacral lesion. Moderately differentiated adenocarcinoma of lower gastrointestinal tract morphology is highlighted in inset.

patients with disseminated colon cancer, all cases with bony and other distant metastases had pulmonary metastases and all cases with pulmonary metastases had hepatic metastases.⁵ This suggests a stepwise progression with portal seeding of the liver preceding systemic spread via the lung; a hypothesis known as the cascade hypothesis.

An appropriate diagnostic workup for patients who present as our case did, with skeletal metastasis of unknown primary, is a medical history, physical examination, routine laboratory tests, tumour markers and a chest radiograph. If possible, tissue should be obtained from the metastatic deposit and further investigations and management targeted accordingly. Given the often poorly differentiated nature of such lesions, CT scanning of the chest, abdomen and pelvis is often required.¹⁻³ Whilst obtaining a diagnosis is important, the fact that patients presenting with skeletal

Figure 3 CT scan showing a large sigmoid tumour

metastases have a poor prognosis should always be considered and investigative strategies must never be at the expense of the quality of a patient's remaining life.

REFERENCES

- 1 Jacobsen S, Stephensen SL, Paaske BP, Lie PG, Lausten GS. Skeletal metastases of unknown origin: a retrospective analysis of 29 cases. *Acta Orthop Belg* 1997;**63**:15-22
- 2 Katagiri H, Takahashi M, Inagaki J, Sugiura H, Ito S, Iwata H. Determining the site of the primary cancer in patients with skeletal metastasis of unknown origin: a retrospective study. *Cancer* 1999;**86**:533-7
- 3 Rougraff BT, Kneisl JS, Simon MA. Skeletal metastases of unknown origin. A prospective study of a diagnostic strategy. *J Bone Joint Surg Am* 1993;**75**:1276-81
- 4 Kanthan R, Loewy J, Kanthan SC. Skeletal metastases in colorectal carcinomas: a Saskatchewan profile. *Dis Colon Rectum* 1999;**42**:1592-7
- 5 Weiss L, Grundmann E, Torhorst J, et al. Haematogenous metastatic patterns in colonic carcinoma: an analysis of 1541 necropsies. *J Pathol* 1986;**150**:195-203