MATTERS ARISING

Multiple spinal epidural metastases

We read the article by van der Sande *et al* in which the authors identified multiple spinal epidural metastases (MSEM) in 30% of their 54 cases with epidural metastases.¹ We have previously prospectively evaluated 95 male veterans with cancer and back pain for epidural metastases using vertebral radiographs and myelography.²

The sites of the primary tumours in our prospective case series are shown in table A for comparison with those reported by van der Sande *et al*.¹ Age ranged from 25–84 years (median 63 years). In 22% of the 41 patients with epidural disease, neither physical examination nor vertebral radiographs accurately predicted the extent of the epidural lesion(s) or the presence of multiple epidural metastases.² MSEM were shown in nine patients (15%) (table B). Eight patients had two epidural lesions and one patient had three lesions. The percentage of patients with myelopathy was similar in patients with single spinal epidural metastases (SSEM) (66%) and those with MSEM (67%). Only 15 (46%) SSEM and five (56%) MSEM cases were ambulatory. Two of 15 (13%) ambulatory SSEM cases required assistance with walking, whereas all five ambulatory MSEM cases required assistance.

A complete myelographic block was found in six (19%) SSEM and five (56%) MSEM cases. Eighteen (56%) SSEM and seven (78%) MSEM cases had either high grade subtotal blocks (greater than 75% block) or total myelographic blocks. In six of the nine MSEM cases, one of the epidural lesions was not anticipated before myelography. Among

these six patients, five had multiple vertebral metastases (prostate cancer two, myeloma two; lung cancer one). The unanticipated epidural lesion was associated with an asymptomatic vertebral metastasis in four of these five patients, whereas the other patient had multiple painful vertebral metastases. The sixth patient had adenocarcinoma of unknown origin and presented with radiculopathy associated with partial collapse of the T10 vertebrae due to a metastasis. Myelography revealed high-grade lesions at both T10 and T1. The T1 lesion was clinically silent and was not associated with a vertebral metastasis.

Treatment of our cases has been previously described and included radiotherapy in all cases; three patients (one MSEM and two SSEM) had surgery in addition.² The Kaplan-Meier estimates of 12 month survival were 0.56 for each group. There was no significant difference in overall survival experience by the log-rank statistic.

Our results mainly support those of van der Sande *et al*.¹ Differences between the two studies no doubt reflect differences in the patient populations studied. Both studies underline the need for imaging the entire spinal canal in patients with possible epidural metastases. Failure to do this may result in unnecessary spinal cord compression at sites distant from the initial symptomatic lesion.³

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1 van der Sande JJ, Kröger R, Boogerd W. Multiple spinal epidural metastases: an unexpectedly frequent finding. *J Neurol Neurosurg Psychiatry* 1990;53:1001–3.

2 Ruff RL, Lanksa DJ. Epidural metastases in prospectively evaluated veterans with cancer and back pain. *Cancer* 1989;63:2234–41.

3 Bonner JA, Lichter AS. A caution about the use of MRI to diagnose spinal cord compression. *N Engl J Med* 1990;322:556–7.

4 Miller DH, McDonald WI, Blumhardt LD, *et al*. Magnetic resonance imaging of isolated non-compressive spinal cord syndromes. *Ann Neurol* 1987;22:714–23.

van der Sande *et al* reply:

The additional details provided by Lanksa and Ruff about the multiple spinal epidural metastases (MSEM) as a part of their elaborate study in veterans with cancer and back pain¹ are indeed largely in accordance with the results in our study,² despite the differences in the patient populations. The higher percentage of MSEM in our study (30%) in comparison with the findings of Lanksa and Ruff (15%) might also be explained by a difference in extent of the visualised area of the spinal canal, as the aim of their study was to examine primarily the symptomatic, that is, painful area.

Another point of interest is the difference in ambulatory state: 15/32 (46%) of single spinal epidural metastases (SSEM) cases in Lanksa's study and 28/38 (74%) of SSEM in our study were ambulant, while 5/9 (56%) of MSEM in Lanksa's study and 13/16 (81%) of MSEM cases in our study were ambulant. These differences are even more striking since Ruff and Lanksa, while including all patients with backpain without neurological symptoms and signs, probably examined their patients at an earlier stage of the disease. Again, differences in the proportions of the primary tumours in the two studies might give an explanation, if we assume that spinal metastases of different primary tumours behave differently. In this respect a possibly more frequent occurrence of MSEM in prostate carcinoma (Lanksa and Ruff) and melanoma patients² in comparison with, for example, lung cancer patients (Lanksa and Ruff) should be mentioned. Stark, Henson and Evans³ in their retrospective study, suggested a higher incidence of MSEM in breast cancer than in lung cancer patients. However, usually the numbers are too small to permit firm conclusions and an argument against significant differences in the occurrence of MSEM might be found in the largely similar proportions of MSEM in breast cancer, even when taken together with melanoma patients, (7/20 and 3/6 respectively; in total nearly one third), in comparison with the remaining patients (6/19, that is, nearly one third) in our own study.

Finally, when discussing the advantages of MRI versus myelography in patients with suspected spinal epidural metastases, it should be borne in mind that a lumbar puncture provides frequently important additional information about the disease: CSF-cytology revealed tumour cells in 20 of 155 (13%) consecutive cases with radicular pain and/or clinical signs of radiculopathy or spinal cord or cauda equina compression in our institute.

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1 Ruff RL, Lanksa DJ. Epidural metastases in prospectively evaluated veterans with cancer and back pain. *Cancer* 1989;63:2234–41.

2 Van der Sande JJ, Kröger R, Boogerd W. Multiple spinal epidural metastases: an unexpectedly frequent finding. *J Neurol Neurosurg Psychiatry* 1990;53:1001–3.

3 Stark RJ, Henson RA, Evans SJW. Spinal metastases. A retrospective survey from a general hospital. *Brain* 1982;105:189–213.

Table A Frequency of epidural metastases by site of primary tumour in 95 male veterans with cancer and back pain

	Primary tumour*	Epidural metastases	Multiple epidural metastases
Lung	39	15	1
Prostate	36	17	5
Head and Neck	5	2	—
Sarcoma	3	—	—
Lymphoma	2	2	—
Myeloma	2	2	2
Melanoma	1	—	—
Bladder	1	—	—
Adenocarcinoma (other than above)	10	4	1
Total Cases	95	41	9

*Four patients had two cancers: three had cancers of both lung and prostate and one had cancers of both lung and thyroid.

Table B Characteristics of nine men with multiple epidural lesions

Number	Age (years)	Primary tumours	Level of epidural lesions*
15	61	prostate	T12* L3–5
23	66	prostate	T3–5 L1*
47	84	prostate	T8* L3–5*
65	52	myeloma	T3 L11*
68	63	myeloma	T9–11* L3
69	73	squamous carcinoma of lung	L4* S1
75	41	adenocarcinoma-unknown primary	T1 T10*
83	63	prostate	T9* L2*
89	66	prostate	T2* T4* T5*

*Symptomatic lesions.