Sacral and non-spinal tumors presenting as backache

A retrospective study of 17 patients

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Among 1302 cases reported to our tumor registry, 78 presented with backache as primary symptom. 17 of these had non-spinal tumors, 7 pelvic, 6 sacral, 3 femoral, and 1 costal. There were long delays in making the correct diagnosis; some patients even had had spinal surgery. The mistakes were the classic ones: poor history, poor physical examination, poor radiological work-up. Analysis of these 17 cases suggests that standard spinal radiographs should include an AP pelvis film and a lateral sacral projection. Patients with persistent radiating pain and normal radiographs should have a Tc-99 scan. The correct diagnosis would have been made in all the cases if this protocol had been followed.

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We report a retrospective analysis of doctors' delay in diagnosing tumors distal to the lumbar spine in 17 patients who had backache as their primary symptom.

Patients and methods

Over the 6-year period 1986–1992 our cancer registry had accumulated 1302 patient files. On review, 78 of these cases presented with backache when first seen at our musculo-skeletal tumor clinic, and 17 of these, in turn, were found to have non-spinal tumors. The clinical records of these 17 patients were scrutinized for common denominators (Table 1).

Results

The youngest patient was 10 years of age and the oldest 59. The median duration of symptoms until the diagnosis of the tumor was 6 months and more than 1 year in 5 cases. All patients complained of lumbar backache and 9 had pain in the tumor region, misinterpreted as referred pain.

7 patients had a pelvic tumor, 6 sacral, 3 femoral, and 1 patient had a costal tumor. The final diagnosis was metastases in 4 cases, chondrosarcoma in 3, malignant fibrous histiocytoma in 2, and 1 each in 8 cases, notably a chordoma, and an aneurysmal bone cyst in the sacrum. 5 patients had had a laminectomy with or without spinal fusion preceding the tumor diagnosis. In 13 cases an AP pelvis radiograph was conclusive for diagnosis, but this procedure had been undertaken in only 9 of these patients. In 3 of our cases the tumor was located by Tc-99 scintigraphy. In 9 of the 17 patients the tumor was located by rectal or abdominal palpation. The aneurysmal bone cyst of the sacrum in a young girl was so massive that it could be palpated subcutaneously.

Comments

Quite a few factors contributed to misdiagnoses and especially late diagnoses of the tumors. We found the following important.

Lack of proper history

Case 1 had extremely severe radiating pain which worsened after laminectomy; her night pain was constant. Case 3 had constant thigh pain which worsened during exercise. Case 5 suffered from lumbar backache for 15 years, which worsened in the 2 years preceding the diagnosis. He also had a known sacral tumor. A review of the histology might have helped to diagnose the fibrous dysplasia at an earlier stage. Case 12 complained of constant pain in the right thigh. Physiotherapy was given without a diagnosis being made.

Table 1. 17 patients with sacral and non-spinal tumors presenting as backache

Case	Age	Site of pain	Duration (mo)	Tumor location	Previous procedures	Procedures (other)	Diagnosis
1	53	Right hip and low back	8	8th rib post. and right hip	Laminectomy		Adenosquamous ca. of bronchus
2	51	Sciatica left leg	6	Left ilium	Laminectomy 10 years before		Undifferentiated metastatic ca.
3	19	Low back and thigh	3	Left femur		Biopsy	Chondrosarcoma
4	54	Low back, buttock and thigh	60	Left ischium	Treated for L5/S1 spondylolisthesis		Osteoblastoma
5	34	Low back and right leg	180[a]	Sacrum and right ilium	2 biopsies and bone graft for NOF[b]		Cystic lesion sacrum Fibrous dysplasia
6	47	Low back, right hip and pelvis	7	Ilium and skeletal metast.		Biopsy ilium	Myeloma
7	46	Low back	2	Right iliac wing		Hemipelvectomy	Grade II chondrosarcoma
8	54	Low back and right leg	84	Sacrum to L5	Laminectomy 7 years before		Epithelioid cell sarcoma metastasis
9	24	Back after lifting and weakness left leg	6	Sacrum		Sacrectomy and L5 vertebrectomy	Chordoma
10	59	Low back	12	Ilium and S1 joint		Biopsy ilium	Metastatic adenoca. Grade II
11	10	Low back	8	Right ilium		Biopsy	Ewing sarcoma
12	42	Low back and sciatica right side	36	Femur	Laminectomy, fusion L3–L5, repeat myelogram and CT. Tc-scan shows tumor incidentally		MFH[c]
13	24	Back	6	Sacrum		Biopsy	Leiomyosarcoma
14	42	Low back and right upper leg	6	Right femur	Lumbar fusion 7 years before		MFH[c]
15	12	Low back and coccyx	4	Sacrum	Angiogram		ABC[d]
16	32	Low back and coccyx	6	Sacrum			Chondrosarcoma
17	28	Low back and left leg S1–S2 area	6	Sacrum		Biopsy sacrum	Giant cell tumor

[a] 2 years extremely painful.
[b] NOF non-ossifying fibroma.
[c] MFH malignant fibrous histiocytoma.
[d] ABC aneurysmal bone cyst.

Incomplete physical examination

Of the 17 patients only Case 4 had had a rectal examination, and no palpation of the area of maximal tenderness was performed in one of the cases. The tumors were almost palpable subcutaneously in Cases 5, 8, 11, and 15. Case 7 had no physical examination performed by the primary physician; he was sent for a complete radiographic work-out, including CT-scans without prior examination.

Hasty decision-making prior to surgery

Case 8 had a raised ESR but he was sent for a repeat CT-scan of his back, looking for a herniated disc. If an ESR had been performed as part of his initial evaluation, it would have drawn attention to other pathological findings. Case 11 was a 10-year-old boy who had a diagnosis of a herniated lumbar disc made without taking his sedimentation rate. At a later stage it was found to be increased, an acute discitis should have been at the top of the list, and not a herniated disc. Our findings include lesions commonly reported in the literature, such as cases of sacral chordomas undergoing hysterectomies or coccygectomies for pelvic tumors (Drukker et al. 1977, Goodnight and Steckel 1979, Lamki et al. 1984, McCain 1985, Kleiner et al. 1991, Campanacci 1993).

Recommendations

After analyzing our cases, we would like to set the following guidelines. Examine all patients thoroughly and palpate all the bony eminences. A standard evaluation of the back should include at least one rectal examination. Standard radiographs of the

lumbar spine should include AP pelvis and lateral sacral projections. In suspicious cases, these views should be repeated after a rectal lavage; overlying gas can obscure tumors of the sacrum. Poor quality radiographs and normal physical examination deserve further attention. We recommend that pain in these patients be investigated by determining sedimentation rates and Tc-99 bone scans. CT-scans should not be part of a routine low backache workout; these would easily lead the inexperienced clinician on a false track. Finally, we would urge our colleagues to listen carefully to the patient's complaints: pain patterns out of the ordinary would then be rapidly detected.

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