Delayed diagnosis of primary bone and soft tissue tumors treated as degenerative spinal disorders

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Background

Symptoms of primary bone and soft tissue tumors located in the trunk sometimes mimic those of degenerative spinal disorders such as low back pain (LBP) or pain or numbness of the legs. In particular, LBP is a common symptom in people of all ages and is typically caused by degenerative spinal disorders such as lumbar disc herniation or lumbar spinal canal stenosis. About two thirds of adults suffer from low back pain at some time and has an annual incidence of 63.7%. In a study of adults in the Mediterranean, 266 (39.5%) had experienced LBP and 166 (24.6%) had experienced sciatica during the previous 6 months.

Compared with degenerative spinal disorders, musculoskeletal tumors are rare, with malignant bone tumors comprising only 0.5% of all malignancies in humans and soft tissue sarcomas having an incidence of 1.5–2%. The annual incidence of bone sarcoma is 8–9 per million population, while that of soft tissue sarcoma is about 30 per million population. Due to their rarity, the correct diagnosis of such tumors is sometimes delayed. Moreover, patients with primary bone or soft tissue tumors located in the trunk are sometimes initially treated for degenerative spinal disorders. A delayed diagnosis, especially of sarcoma in the trunk, could negatively impact patient prognosis. In this study, we investigated cases of delayed diagnosis of primary bone and soft tissue tumors initially treated as degenerative spinal disorders before the correct diagnosis was made.

Purpose

To assess cases of delayed diagnosis of primary bone and soft tissue tumors initially treated as degenerative spinal disorders.

Patients and Methods

A retrospective review was performed of the records of 383 patients with primary bone and soft tissue tumors who visit our outpatient clinic from 2011 to 2013 at a single institution. Patients with delayed diagnosis of primary bone and soft tissue tumors initially treated as degenerative spinal disorders for more than 2 months were identified by reviewing hospital stay documentation. Patients diagnosed as having distant metastasis from other organs were excluded. The delay between onset and definite diagnosis, primary symptoms, initial diagnosis, tumor identification, pathological diagnosis, tumor progression, treatment, and prognosis were examined.

Results

Of the 383 patients, 5 (1.3%; 1 man and 4 women; mean age, 35.5 years; range, 14–75 years) had been treated for degenerative spinal disorders before consulting our hospital (Table 1). All 5 patients had bone or soft tissue tumors in the lumbar spine or pelvis. Three patients had a malignant tumor (osteosarcoma, chondrosarcoma, or small round cell sarcoma) at the progressive stage, and 1 patient died of lung metastasis. Two patients had a benign tumor (aneurysmal bone cyst or simple bone cyst). The initial symptoms in all cases were LBP, leg pain, and buttock pain, which were similar to those of degenerative spinal disorders. Two patients had been treated for simple LBP, 1 for spondylolisthesis, 1 for common sciatica, and 1 for lumbar disc herniation at a mean time of 10 months (range, 2–36 months) before the definitive diagnosis was made. Tumors were finally identified on magnetic resonance imaging (MRI) in 3 patients, computed tomography (CT) in 1 patient, and plain radiography in 1 patient.

Four patients had bone tumors and 1 patient had a soft tissue tumor with bone invasion. In addition, 1 patient had distant metastasis and 3 patients presented with local progression when the definite diagnosis was made. Four of the 5 patients underwent biopsy to establish histological diagnosis. Palliative treatment was performed in 1 patient, chemotherapy in 1, and curettage and bone grafting in 1. The patient with distant metastasis died of disease, 1 patient was disease free, and 3 patients were alive with disease.

Conclusions

Early and correct diagnosis of primary bone and soft tissue tumors can improve patient survival. However, cases of primary bone or soft tissue tumor located deep around the spine, especially those with slow tumor growth, are sometimes difficult to diagnose due to their rarity and minor symptoms. Our findings suggest that when low back pain and leg pain are refractory to conservative treatment,

further radiological examination should be conducted to ensure that diagnosis of primary bone and soft tissue tumors is not delayed.