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CASE REPORTS

A Case of Vertebral Solitary Bone Plasmacytoma

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A solitary bone plasmacytoma presenting as lumbar facet joint dysfunction is described. This report illustrates the importance of reviewing patients after treatment and performing further investigations if the patient's symptoms do not resolve.

CASE REPORT

A 55-year-old man had a 3-month history of increasing central low back pain that was worse in the morning and after prolonged sitting. There was some radiation into the right buttock. The pain was not aggravated by coughing or sneezing and there was no disturbance of bowel or bladder function.

The patient's job as a truck driver involved heavy lifting, and his pain was impeding his ability to work. He had been treated with nonsteroidal antiinflammatory drugs and physiotherapy, which had consisted of electrotherapy, massage, and a McKenzie home exercise program. None of these had helped his pain. Lumbar spine X-ray and computed tomography were reported to be normal.

Examination revealed painful limited flexion and extension, and lumbar quadrant testing was positive bilaterally and worse on the right side. Trendelenberg test and cervical slump were negative. Straight leg raise was equal at 90° bilaterally. Thomas test demonstrated mild restriction bilaterally, and there was full free range of motion of the hips. There was tenderness over the L2–3 and L3–4 facet joints that was worse on the right side. Maitland-type posteroanterior mobilization of his L2–3 and L3–4 facet joints bilaterally eased his pain at the time of consultation.

A provisional diagnosis of L2–3 and L3–4 facet joint dysfunction was made. Janda-type stretches were prescribed, and the patient was referred to a physiotherapist for further treatment.

Two days later, the patient reported to the physiotherapist that his pain became much worse 2 hours after the initial mobilization. The physiotherapist treated him with rotational mobilizations that again aggravated his pain.

One week after the initial consultation, the patient stated that his pain was worse and that he was unable to stand upright. Examination findings were unchanged. Full blood examination was normal with an erythrocyte sedimentation rate of 8 and C-reactive protein <5. A single photon emission computed tomography (SPECT) scan of the lumbar spine was then performed, which revealed decreased isotope uptake in the body of L3. A subsequent close inspection of the initial computed tomography scan revealed an expansile lesion in the body of L3 (Fig. 1). Magnetic resonance imaging demonstrated the presence of an expansile, destructive bony lesion in the body of L3 (Fig. 2). A provisional diagnosis of plasmacytoma was then made.

Computed tomgraphy-guided trephine needle biopsy of the lesion confirmed the diagnosis of plasmacytoma. To exclude multiple myeloma, biopsies of the hip, sternum, and femur were also performed but showed no evidence of tumor. Bone survey, serum protein electrophoresis, and urinary protein electrophoresis also were performed and were negative.

A final diagnosis of solitary bone plasmacytoma was made. The patient received 10 doses of radiotherapy to 40 Gy and is free from pain 3 months after therapy.

DISCUSSION

The differential diagnosis of low back pain in this age group includes muscle strain, disc pathology, facet joint dysfunction, referred pain, infection (either discitis or osteomyelitis), abdominal aortic aneurysm, and tumor. Clinical features that should alert the physician to the possibility of tumor are history of malignancy, weight loss, night pain, and failure to respond to therapy.

Multiple myeloma and its variants usually occur with a mixture of inflammatory and mechanical pain. Solitary bone plasmacytoma is a less aggressive variation of multiple myeloma. Like multiple myeloma, it is caused by the uncontrolled proliferation of plasma cells derived from a single clone. Pain in this condition is precipitated by movement caused by mechanical compromise of the involved bone from tumor lysis. Night pain, commonly associated with metastatic cancer, is not as commonly seen in plasmacytoma. The average age of onset of multiple myeloma is 64 and males are affected more frequently than females. However, solitary bone plasmacytoma can occur at an earlier age, most commonly in the vertebra and ribs (1,3,6). There have been reports of this condition in pediatric patients.

Solitary bone plasmacytoma is very responsive to radiotherapy in a dose of 40 Gy, and median survival is >10 years (1,4). The mean survival for patients with multiple myeloma ranges from 12 to 60 months, depend-

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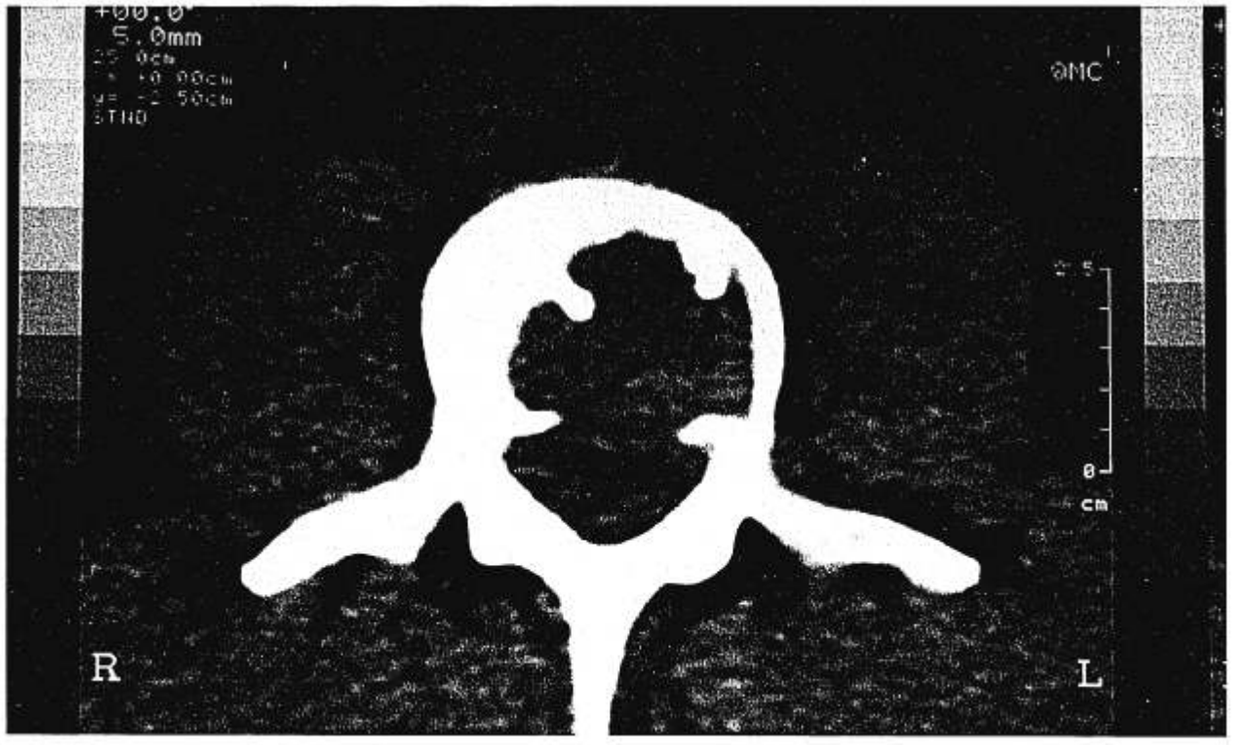

FIG 1. Axial computed tomography of L3 showing expansile lesion.

FIG. 2. Sagittal magnetic resonance image demonstrating expansile destructive lesion.

ing on staging. Multiple myeloma develops in approximately 70% of patients with solitary bone plasmacytomas, generally within 3 years of diagnosis and usually within 10 years. Few tests are available that can predict outcome for these patients. Monitoring M-proteins, regular magnetic resonance imaging of the spine (7,8), and total body bone scans (where they found increased bone turnover as distinct from this patient) (10) are recommended by various authors. Some authors have found a long-term benefit through low-dose chemotherapy for 3 years after radiotherapy (6,9,10), but these studies have only involved small numbers of patients.

The patient described in this report requires regular monitoring of his full blood examination, calcium, immunoglobulin G and A levels, M-proteins, and urinary light chains. Regular screening X-rays are desirable (8–10).

This report demonstrates the importance of assessing the clinical response of patients to therapy and performing further investigations if necessary. It is advisable to review imaging studies in all patients and not rely on "normal" reports.

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Simultaneous Rupture of the Anterior Cruciate Ligament and Patellar Tendon

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Injury to the anterior cruciate ligament (ACL) is common, particularly during sporting events. Conversely, rupture of the patellar tendon is an uncommon injury and usually occurs secondary to a forceful eccentric contraction of the extensor mechanism. The purpose of this report is to remind the physician of the possibility of this injury combination. Examination of the knee is more difficult in the presence of an acute injury, and a lack of full active knee extension may be incorrectly attributed to pain or the presence of a hemarthrosis. Therefore, an injury to the patellar tendon may be missed, and the clinical presentation may be attributed to the more common ACL injury.

CASE REPORT

A 26-year-old professional football player sustained a twisting injury to his left knee with his foot planted. At the time of injury, he was also struck on the contralateral shoulder, but there was no direct force to the affected knee. There was immediate pain and swelling in the knee, and he was unable to continue to play.

Initial examination revealed ACL laxity with a 3+ Lachman. The patient also was unable to fully extend his knee against gravity but was able to achieve full extension with gravity eliminated (grade 3 power). There was no palpable defect of the patellar tendon and no initial ecchymosis, although diffuse anterior bruising developed over 24 hours. The collateral ligaments were stable to clinical examination.

Radiographs of the injured knee showed a subtle patella alta (Fig. 1). Subsequent ultrasonographic studies revealed a disruption of the patellar tendon (Fig. 2a), confirming a diagnosis of concurrent ACL tear and patellar tendon rupture. The patient had no precipitating risk factors and was in otherwise good health. He did not report taking any medications (specifically, anabolic steroids) or having any history of knee problems.

Initial surgical intervention was directed toward the ruptured patellar tendon and revealed a ragged laceration of the midportion of the patellar tendon. There was also disruption of the lateral and medial retinaculae extending from the 10 to 2 o'clock positions. The ACL was disrupted near its origin on the lateral femoral condyle. A bucket handle tear in the vascular portion of the medial meniscus was present and locked in the intracondylar notch. The meniscal tear was reduced and then repaired using a combination of an inside-out technique for the posterior portion of the meniscal tear and an open repair of the anterior portion of the meniscus. The patellar tendon was repaired with two Bunnell sutures, using No. 1 Ethibond (Johnson & Johnson, Peterborough, ON, Canada). The lateral and medial parapatellar retinaculum were also repaired with interrupted sutures. Two No. 5 Tevdek (Davis & Geck, Markam, ON, Canada) sutures were passed through drill holes in the patella and the tibial tubercle as a restraining stitch to protect the patellar tendon repair. Intraoperatively, the knee was placed through a range of motion, and there was no excessive stress on the patellar tendon repair.

After surgery, the leg was placed in a hinged knee brace and locked in extension. The allowable knee range of motion was increased over a period of 6 weeks, followed by a physiotherapy program to regain full range of motion and strength. Postoperative radiographs demonstrated an adequately reduced patella.

Three months after surgery, the patient's progress was good, but he experienced occasional feelings of instability. On examination, there was full extension, good flexion, and improving quadriceps strength. There was a 2+

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