

Anaplastic Carcinoma Of The Pancreas Appearing With Low Back Pain Due To Epidural Spinal Cord Compression: A Case Report

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Abstract

Low back pain (LBP) is one of the most important health conditions that can affect human with physical and psychosocial changes. Nonspecific LBP, defined as self-limiting and which exact cause cannot be determined, is common among older adults. Besides, lumbar disc herniation should be the first diagnosis that comes to mind in between 40–60 years-old patients with clinical findings of radiculopathy with LBP. However, in order not to miss important causes such as malignancy that can cause LBP, the patient's anamnesis should be deepened, and physical examination should be performed carefully. We reported the case of a 53-year-old woman with anaplastic carcinoma of the pancreas (APC) where the initial symptom was LBP accompanied by radiculopathy and diagnosed by tru-cut biopsy from the sacral metastatic soft tissue mass, which was specified by the advanced imaging. APC is a rare cancer, and the survival time of the patients is quite short due to its rapid spread and resistance to chemotherapy and radiotherapy. Based on this case, clinicians should evaluate the patient detailly, prefer further imaging when necessary, and discuss the case with musculoskeletal radiologists when there are diagnostic problems, which will reduce the possibility of overlooking the underlying serious causes of LBP.

Introduction

Low back pain (LBP) is one of the most common musculoskeletal complaints encountered in our clinical practice. The complexity in obtainment a definitive diagnosis for most presentations of back pain has given rise to the term “non-specific low back pain,” which is generally considered to be benign and can be managed in a primary care setting. However, some of the patients present with LBP as the initial manifestation of more serious clinical disorders, such as malignancy, spinal fracture, infection, or cauda equina syndrome.¹

Especially, LBP with concurrent radiculopathy in between 40–60 years-old patients is commonly associated with lumbar disk herniation.²

Nevertheless, as in this case, detailed history, especially red flag questioning, full clinical examination and advanced imaging methods may lead us to show the underlying primary malignancy in a patient with LBP. Therewithal neoplastic epidural spinal cord compression (ESCC) is a relatively common complication of cancer that can cause LBP, mechanical instability of the spine, and potentially irreversible loss of neurologic function.³

In this study, we describe a rare case of anaplastic carcinoma of the pancreas (ACP) detected by advanced examinations in an elderly patient with worsening LBP and progressive neurological deficit.

Case Presentation

A 53-year-old female was consulted our clinic with complaints of lower back and accompanying right leg pain for about 40 days. She had never complained of LBP in her life before. The pain, which was only in the lumbar region at first, worsened gradually, and spread to the medial of the right leg and the dorsum of

the foot. The pain character was burning and cramping and tended to decrease while at rest. She did not describe loss of sensation, numbness or tingling. The pain was achy all day, worsening at night and scored as 9 of 10 on a visual analog scale. She reported that she had difficulty walking for about a week due to severe pain and loss of strength in her right leg. When anamnesis was deepened, she stated that she had fatigue, sometimes night sweats, and 4 kg loss in the last month. No bowel or bladder related symptoms were reported. 5 days after the onset of LBP, the patient was evaluated and further investigated by the external medical center neurosurgery clinic, and the non-contrast lumbar spine MRI of the patient at that time was reported as having a right sided broad-based posterior protrusion at the L2-3 level and compressing the thecal sac and right L2 nerve root. Gabapentin 900 mg/daily was given in three divided doses but there was no effect on her LBP. There was no history of smoking, trauma, other chronic and systemic disorders. There was no specification about her family story.

On physical examination, vital signs were within normal limits. In the musculoskeletal exam; there was mild tenderness on T11-12 spinous processes. The lumbar range of motion (ROM) was painful and limited in the end of the ROM in all directions. Straight leg raise test, well leg raise test, Patrick FABERE and Braggard tests were positive on the right side for LBP with radiation to the right leg down. Femoral stretch test was negative for both sides. Neurological examinations revealed decreased muscle power for the right hip flexors (Manual Muscle Test (MMT) grade III), right ankle dorsiflexors (MMT grade II), right big toe extensors (MMT grade II) and right ankle plantar flexors (MMT grade IV). Her achilleas reflex at the right leg disappeared, and sensations at the posteromedial side of calf and last toe were reduced. Pathological reflexes were negative at both lower extremities.

Laboratory investigations contained complete blood count, serum biochemistry, electrolyte profile, c-reactive protein (CRP) and erythrocyte sedimentation rate (ESR). Abnormal findings from laboratory was CRP: 20 mg/L and ESR 1 hour: 48 mm. Thereafter measured serum tumor markers results were CA 125: 47 U/ml and CA 15 - 3: 180 U/ml.

Anterior-posterior (AP) pelvis X-ray showed right half of the sacrum is observed with increased density and intestinal gases pushed left and caudally at the right pelvic entrance.

The first lumbar MRI of the patient which was re-examined due to worsening of the patient's symptoms and physical examination findings that cannot be explained by the L2 lumbar radiculopathy; there were multifocal lesions showing signal loss in T10-T11 vertebrae in T1 sequences and a mass lesion showing signal loss in the right half of the sacrum in T2 sequences. Lumbar spine MRI, which was repeated and additionally performed with contrast imaging, revealed the metastatic lesions observed in the previous examination in T10-T11 vertebrae were enlarged and spread to both pedicles, disrupting the bone integrity of the right side, and compressing the spinal cord from the right and narrowed the right neural foramina from T10 to T12 vertebrae (Fig. 1). Also, there was a large metastatic mass extending between the hip soft tissues and in the form of paravertebral muscle invasion up to the level of L4 vertebrae. This large metastatic mass was destroying the cortex, compressing S1 right nerve root and reaching 16 × 12 × 6.5 cm in the right half of the sacrum (Fig. 1). Furthermore, osteolytic metastatic involvement was

observed in T2-T5-T10-T11-T12-L2-L3 and L4 vertebrae, right iliac wing, right femoral neck, trochanter major of left femur and right superior pubic ramus. These masses were showed high staining at solid phase after intravenous contrast injection.

The patient was referred for an immediate consultation to medical oncology and neurosurgery clinics. F-18 FDG PET/BT results showed us a metastatic soft tissue mass, approximately 10 × 5 cm in size, invading the spinal cord between the T8-12 vertebra levels, another soft tissue mass, approximately 14 × 7 cm in size, destructing the right half of the sacrum and a hypermetabolic mass lesion at the pancreatic body-tail junction, approximately 2.8 × 2.4 cm in size, primarily compatible with primary pancreatic malignancy. The patient underwent tru-cut biopsy from the soft tissue mass on the right side of the sacrum. Histological studies reported as undifferentiated ACP. Furthermore, the tumor showed a solid-infiltrative growth pattern with small-medium round cells and focal necrosis areas. Chemotherapy and radiotherapy were started after the biopsy result. After approximately 10 days, the patient applied to the emergency department with complaints of general condition disorder, chest pain, dyspnea and hemoptysis. Bilateral massive pulmonary thromboembolism was observed in computed tomography angiography. And the patient died on the same day.

Discussion

LBP with concurrent radiculopathy in a mid-50-year-old patient is usually associated with lumbar disk herniation.²

However as in this case, specific causes of LBP should be considered and advanced imaging methods should be used in patients over 50 years of age who present with sudden onset, awaken at night, worsening and accompanied by neurological deficits, night sweats and weight loss. Spinal fracture and malignancy are the most common serious pathologies affecting the spine. In patients with LBP applying to primary care, between 1% and 4% will have a spinal fracture and in less than 1% malignancy will be the underlying cause.¹ It is important to question the red flags in uncovering the serious underlying causes of the patient presenting with LBP.

In this case, ACP, is a very rare histologic subtype of pancreatic cancer, complicated with ESCC was defined in a patient who presented with LBP and accompanied by clinical findings mimicking radiculopathy. In addition, an important point to be taken from this case is that LBP due to spinal metastases was the initial symptom of ACP. According to the literature ESCC is the initial manifestation of malignancy in approximately 20 percent of patients.⁴ At autopsy, vertebral metastases have been described in 25 percent with gastrointestinal (GI) cancers.⁵ Sandhu et al⁶ reported that the histological diagnoses included colorectal cancer (46%), hepatocellular carcinoma (19%), neuroendocrine carcinoma (13%), pancreatic carcinoma (12%), and the other GI cancers (10%). And previous reports have showed the prevalence of the skeletal metastases of the pancreatic cancers to range from 5 to 20 percent.⁷ ACP or undifferentiated carcinoma is reported to represent only 2–7% of all pancreatic cancers.⁸ To the best

of our knowledge, there are no case reports in the literature with the initial symptom of LBP due to ESCC and diagnosed with ACP.

The patients usually have rapid growth large tumors and very poor prognosis when diagnosed.⁹ The clinical features of the ACP are abdominal pain, back pain, fatigue, fever, jaundice, body weight loss and abdominal discomfort according to Hoshimoto et al¹⁰. All types of ACPs poorly have survival when compared the invasive pancreatic ductal adenocarcinomas. It has been shown that chemotherapy and radiotherapy do not affect the prognosis. It has been stated that surgical application may be the most appropriate form of treatment, but its benefit has not been demonstrated yet.^{11,12}

Another important point that we would like to state based on this case is that, in patients who applied to the outpatient clinic with advanced imaging results, inconsistency between anamnesis, clinical and physical examination findings and previous clinical diagnosis, images should be re-examined and if necessary, imaging should be repeated or further imaging should be preferred. Technical differences between MRI devices and in MRI interpretation experience of musculoskeletal radiologists may cause difficulties in terms of diagnosis. Besides, clinicians and radiologists should evaluate not only bone and muscle tissues but also surrounding tissues when examining MRIs related to the musculoskeletal system.

In conclusion, this case showed that detailed history, good physical examination, more careful and better patient follow-up are the most important keys to avoid the more important reasons that may be underlying of LBP.

Declarations

Conflict of Interest: The authors declare that they have no conflict of interest.

Informed consent: The patient's son has given his consent for the publication of this article.

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Figures

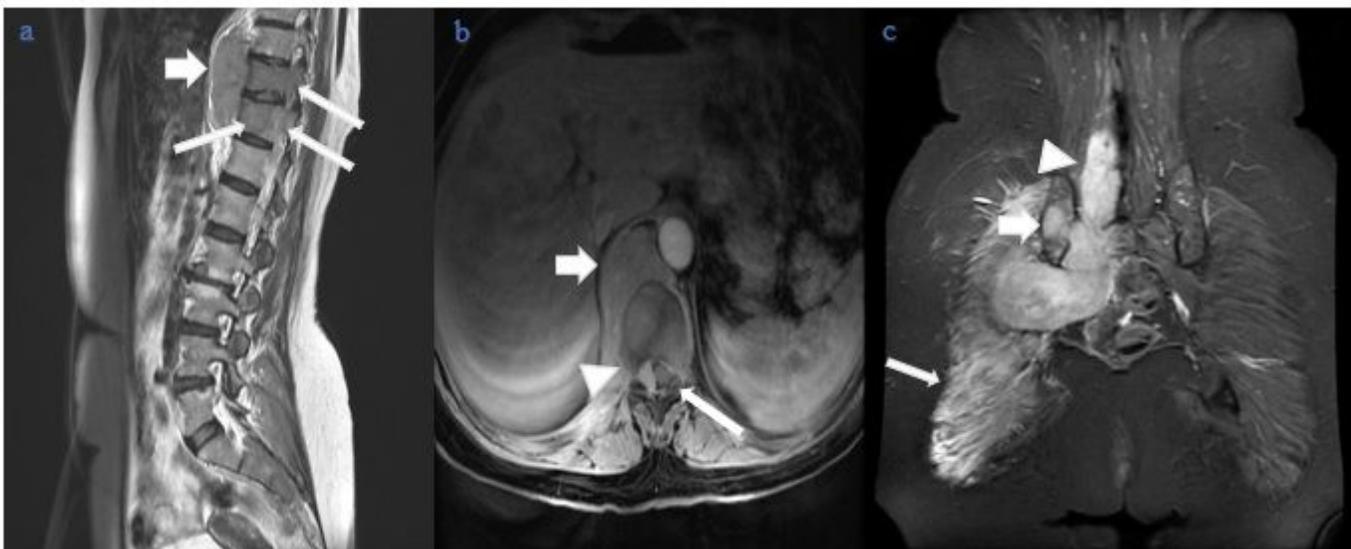


Figure 1

Gadolinium contrast MR images of the lumbar spine. (a) T2 sagittal image showed a prevertebral mass (thick arrow) with corpus and foraminal involvement (thin arrows). (b) T1 axial image confirmed the enhancing mass (thick arrow), foraminal involvement (arrowhead) and spinal cord compression (thin arrow). (c) STIR coronal image demonstrated a large metastatic mass with paravertebral (arrowhead),

sacroiliac and sacral (thick arrow) involvements. Additionally, gluteal denervation edema (thin arrow) seen in gluteal muscles.

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