Solitary Plasmacytoma of the Chest Wall

Göğüs Duvarının Soliter Plazmositomu

Plazmasitom / Plasmacytoma

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Özet

55 yaşında erkek hasta sağ yan ağrısıyla kliniğimize başvurdu. Fizik muayenede sağda 4. kaburga düzeyinde ağrılı solid kitle palpasyonla anlaşıldı. Sağ göğüs duvarındaki kitlenin akciğer grafisi ve bilgisayarlı tomografisinde 60x33 mm olduğu ve 4. kotu destrükte ettiği saptandı. Yapılan iğne aspirasyonunda plazmositoid hücreler görüldü. Hastaya göğüs duvarı rezeksiyonu ve rekonstrüktif cerrahi uygulandı. Çıkartılan göğüs duvarı tümörünün patolojik tanısı soliter plazmositom olarak rapor edildi. Ameliyattan sonraki iki yıllık izlemde hastada multipl miyelom gelişimi ve nüks izlenmedi.

Anahtar Kelimeler

Plazmasitom; Tümör

Abstract

A previously healthy 55-year-old man with right sided lateral chest pain admitted to clinic. It was found a solid and painful mass at the right 4th rib in physical examination. Chest X-ray and thoracic computarized tomography showed an opacity measured 60x33 mm within the right chest wall destructing the 4th rib. Needle aspiration was performed from tumor and cytologic examination showed atypic plasma cell infiltration. The patient was scheduled for a chest wall resection and reconstructive surgery. Examination of a permanent section showed that the chest wall tumor was solitary plasmacytoma. There was no evidence of multiple myeloma recurrence after two years from the operation.

Keywords

Plasmacytom; Tumor

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Introduction

Solitary plasmacytoma (SP) is a rare plasma cell neoplasm that occurs in the absence of systemic signs of multiple myeloma. They most commonly affect men in their elderly 60s, and occur in upper respiratory tract, lymph nodes, lung, thyroid, gastrointestinal tract, liver, spleen, pancreas, testes, breast, or skin [1]. A monoclonal protein is detected in the serum and urine in approximately 25% of patients [2]. An involvement of the chest wall and ribs in multiple myeloma is generally associated with other skeletal localizations. There are few reported cases of solitary plasmacytoma of the ribs [3]. Patients with solitary plasmacytoma of the chest wall are curable and have a higher survival rates with the combination of surgery and adjuvant therapies, as reported in this case.

Case Report

A 55-year-old man presented with right sided lateral chest pain. Physical examination revealed a solid and painful mass at the right 4th rib. Chest x-ray showed a mass shadow measured 60x33 mm within the right chest wall (Figure 1). Computed tomography revealed destruction of the 4th rib (Figure 2). Cytology of the needle aspiration showed atypic plasmacytoid infiltration but was not found to be adequate for exact diagnosing by the pathologist. Serum protein electrophoresis did not reveal monoclonal gammopathy. Urine was negative for Bence Jones protein. Anemia, hypercalcemia and renal impairment attributable to myeloma were not detected. Hemoglobin level was 15,0 g (normal range: 13-17g/dl). The level of serum calcium was 9,1 mg (normal range: 8,9-10mg/dl) and creatinin was 1,2 mg (normal range: 0,30-1,4 mg/dl). Computarized tomography of the spine was normal. Magnetic resonance imaging is a noninvasive technique for sampling a large volume of bone marrow but was not used in this case, because iliac bone marrow aspiration did not reveal evidence of myeloma. Bone scintigraphy revealed single involvement of the lesion destructing the right 4th rib. The results of a radiographic survey did not show any lesion. The patient was scheduled for a chest wall resection and reconstructive surgery. A chest wall dissection was performed, encompassing an area of 10.0x9.0x3.5 cm starting from the lower edge of the 3rd rib to the upper edge of the 5th rib including the intercostal muscle and the parietal pleura. Solid mass was reported as 6x4x3,5cm from specimen. A large surrounding area as far as 4 cm from the tumor was resected regarding surgical margins of the mass histopathologically. The defect of the chest wall was reconstructed with polytetrafluoroethylene mesh and a skin flap. Examination of a permanent section revealed that the chest wall tumor was plasmacytoma (Figure 3). Surgical margins were free of the disease. The tumor stained positively for



Figure 1. Chest radiograph of the patient, arrow shows the chest wall tumor originating from the rib.

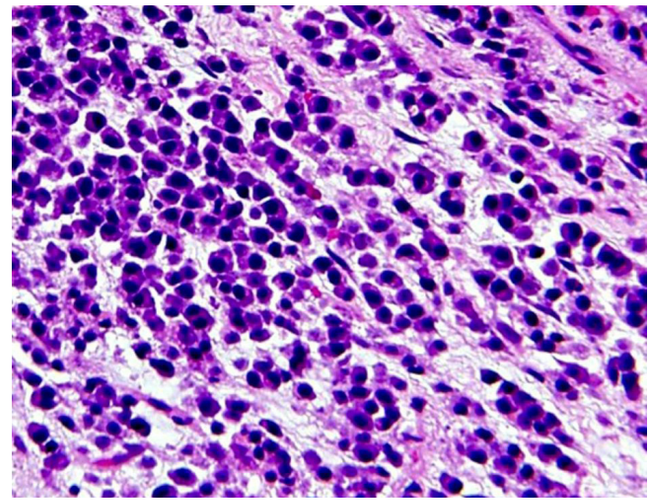


Figure 3. Biopsy specimen of the tumor showed infiltration of the plasma cells (H&E, x400 magnification).



Figure 2. Chest computed tomographic scan of the case, arrow shows the mass (60x33mm) destructing the fourth rib.



Figure 4. Posteroanterior chest radiograph of the patient after two weeks from surgery.

CD 138 and kappa light chain. CD 138 (syndecan-1) is a useful immunohistochemical marker of neoplastic plasma cells [4]. Kappa light chain staining is used for monoclonal gammopathy of plasma cells. M-protein was not detected in the blood or urine. The patient was discharged after two weeks from the surgery (Figure 4). Because of having clear surgical margins, local irradiation to thoracic wall was not recommended by oncology. There was no serum evidence of recurrence or development of multiple myeloma after two years from the operation. Therefore, the final diagnosis was solitary plasmacytoma of the chest wall. But the longer time is necessary to observe development of recurrence or multiple myeloma.

Discussion

In this case report, a patient with a solitary plasmacytoma of the chest wall was presented. The tumor in the rib consisted of abnormal plasma cells. However, no proliferation of plasma cells was observed in the bone marrow. Chest wall tumors may have a wide range from congenital vascular disorders like hemangiomas to any malignant tumor of the soft tissues and bones [5]. Primary malignant tumors arising from the bony chest wall are uncommon and SP is a rare condition of plasma cell dyscrasias [6]. Among plasma cell neoplasms, SP is considered to be a solitary bony tumor consisting of abnormal plasma cells. The exact prevalence of SP is not clear. This entity affects 3-5% of patients with plasma cell myeloma treated at referral centers. The most common symptom at presentation is pain at the site of the skeletal lesion. In contrast with multiple myeloma, however, a large proportion of patients with SP fail to reveal a monoclonal protein in the serum or urine. High levels of monoclonal protein and depression of uninvolved immunoglobulins should trigger a thorough work-up for multiple myeloma. Radiographically, plasmacytoma almost always destroys bone. Recently, with advances in radiological diagnosis and related instruments, percutaneous needle biopsy has become a popular technique for the diagnostic evaluation of chest lesions. The criteria for the diagnosis of SP presented as : biopsy evidence of a plasma cell neoplasm; bone marrow biopsy specimen with negative findings; and absence of evidence of other lesions detected on clinical or skeletal examination [7]. The findings in the present patient fulfilled the diagnostic criteria. In previous cases, radiation therapy was used as the primary treatment for solitary plasmacytomas.

The median time to progression of multiple myeloma has been reported to be 2 to 3 years after radiotherapy that is recommended as standard treatment . Some studies excluded patients with disease that progressed within 2 years of diagnosis [7]. The presented patient underwent complete surgical resection with clear surgical margins and local radiotherapy was not recommanded by radiation oncology.

Monitoring of the patient with two years survival without any recurrence supports the diagnosis of solitary plasmacytoma. But the longer time is needed to say no progression or recurrence of myeloma. The most common pattern of progression consists of new bone lesions, rising myeloma protein levels, and development of diffuse marrow plasmacytosis. Some patients develop new bone lesions without intervening marrow plasmacytosis, consistent with a macrofocal pattern of multiple myeloma. However, the course is often quite protracted, and the patients may live for many years without evidence of dissemination.

Competing interests

The authors declare that they have no competing interests.

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