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Case Report Open Access

Giant Solitary Fibrous Tumor of Posterior Mediastinum: A Case Report

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Abstract

A 54-year-old male was taken to a hospital after experiencing persistent back pain for a month. A spinal column MRI showed a mass in T5-T8 fanterior edge. After four months follow-up, another MRI revealed the mass had grown up to the site of T3-T9. An ^{18}F-FDG PET/CT imaging was underwent and the imaging showed three tumors mass which all had a high uptake of ^{18}F-FDG locating in thorax, abdomen and pelvis, respectively. The thoracoscopic biopsy histological revealed the mass was mesenchymal tumor and immunohistochemistry showed positive for CD34 and CD39, that all proved the mass is solitary fibrous tumor.

Keywords: Solitary fibrous tumor; MRI; PET

Introduction

Solitary fibrous tumor is an uncommon tumor which is from dendritic mesenchymal cells [1]. It is a slow-growing neoplasm and present as an asymptomatic mass, when the mass grow up, some symptoms come up corresponding. So the diagnostic rate of the solitary fibrous tumor was usually not high [2].

Case Report

A 54-year-old male was taken to a hospital after experiencing persistent back pain for a month. He had no spine movement disorder, physical activity limitation and numbness. He also had no other chest complaints, such as cough, chest tightness, shortness of breath, or hemoptysis.

His smoking history consisted of ten cigarettes per day for the past ten years. Examination of the chest revealed coarse breath sounds and had no wet and dry rales. In January 2014, a sagittal spinal column magnetic resonance imaging (MRI) showed a giant stripped solid mass extended from the anterior edge of T5 down to T8.

The T2WI image showed a higher signal intermediate, on the contrary for the T1WI (Figure 1A). The following contrast-enhanced computed tomography (CECT) had the same result. In the plain scan, lung and mediastinal windows were used to read the images (Figure 1B and 1C). For the enhanced images, from arterial to venous phase, the mass strengthened gradually (Figure 1D and 1E).

Then after four months follow-up, another MRI was performed and revealed the mass had grown up from the fanterior edge of T3 down to T9 (Figure 1F). The signal information was similar to the early one.

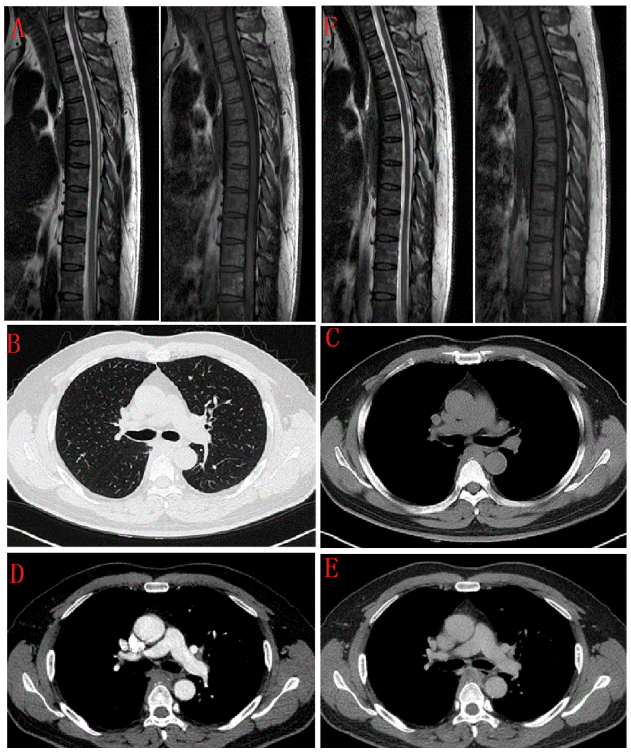

Figure 1: The first sagittal spinal column MRI scan of T2WI and T1WI image (A). In the chest CECT scan, the lung and mediastinal windows of plain scan images (B and C). In the chest CECT scan, the enhanced images (D and E). The second follow-up sagittal spinal column MRI scan (F).

In order to definite the property of the mass, in June 2014, a fluorine-18-fluorodeoxygulucose positron emission tomography/

computed tomography (^{18}F-FDG PET/CT) was performed. In the view of transverse section, PET/CT fusion image confirmed that the mass showed a mildly increased FDG uptake with standardized uptake value (SUV) max of 8.8 (Figure 2A). Near to the right arteria iliaca communis saw thickening soft tissue density with rough border, measuring 4 × 3.2 × 4.9 cm, SUV max of 6.8 (Figure 2B). Beside the colon sigmoideum also had a hypermatabolic activity area with SUV max of 7.1 and size of 5 × 4.6 × 4.6 cm (Figure 3C).

On 7 July 2014, a thoracoscopic biopsy histological was taken for the lesion in the fanterior edge of thoracic. Photomicrographs (Figure 3A, hematoxylin-eosin, original magnification 40×; Figure 3B, hematoxylin-eosin, original magnification 100×) showed uniform spindled cells revealing the mass was mesenchymal tumor. The immunohistochemistry results showed that the tumor cells were negative for SMA, VIM and S-100, positive for CD34 and CD99 (Figure 3C and 3D). The mass was proved to be solitary fibrous tumor.

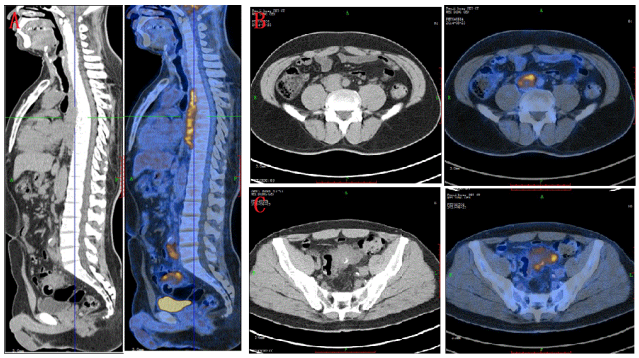

Figure 2: PET/CT fusion image showed the SUV information about the mass (A). Near to the right arteria iliaca communis there was a thickening soft tissue (B). The image showed that beside the colon sigmoideum there was a soft tissue (C).

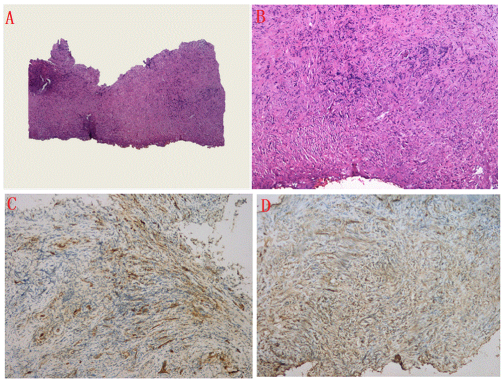

Figure 3: The photomicrographs of the biopsies for the mass (A, hematoxylin-eosin, original magnification 40×; B, hematoxylin-eosin, original magnification 100×). The immunohistochemistry results that the mass had positive for CD34 and CD99 (C and D).

Discussion

A solitary fibrous tumor is a rare form of tumor that is only occasionally cited in the literature, usually in single cases. In most solitary fibrous tumor cases, CECT may show heterogeneous density, so as the MRI signal information. Traditional imaging methods are not sensitive for the diagnosis of solitary fibrous tumors [3,4].Though solitary fibrous tumors are benign tumors, about 20% of solitary fibrous tumors have maligant potential [5]. To the case in the paper, we find three focus in the patient. MRI scan as a partial imaging of the body only find one lesion, but PET/CT as a whole body scan find other two lesions. PET/CT can provide the matabolic and the whole body information that has its unique advantages in functional diagnosis [6]. In addition, some studies show that when the tumor has the maligant potential, the mass will have a high FDG uptake [7]. So the FDG uptake degree may be one factor of the tumor's aggressive behaviour [8].

In our case, the tumors have a moderate high FDG uptake in accordance with the maligant degree. Through appropriate biopsy get the histological and the immunohistochemistry result is the gold standard of the solitary fibrous tumor disgnostic [1-9]. Surgery is the mainstay of treatment, and recurrence and the clinical outcome is mainly related to the completeness of the surgical treatment [10,11].

Acknowledgments

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