been reported to have high sensitivity and specificity in its diagnosis. Clinical picture, radiological findings and elevated serum Beta-D-Glucan (Fungitell) supported the diagnosis of Pneumocystis jirovecii. Patient recovered with oral Atovaquone for 21 days and tapering course of oral Prednisone. Repeat imaging showed complete resolution and Serum Beta-D-Glucan level trended down.

**Take-home message:** Interleukin-6 receptor blocker, used in patients with rheumatoid arthritis increase the risk of pneumocystis pneumonia, an opportunistic infection. Serum Beta-D Glucan test can be used as non-invasive testing modality to diagnose pneumocystis pneumonia in non-HIV patients with good sensitivity and specificity. Serial Beta-D Glucan levels may be used to monitor with clinical progress. Molecular methods such as *Pneumocystis jirovecii* PCR (Polymerase chain reaction) may be falsely negative in non-HIV patient.

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**Breast cancer detected only by positron emission tomography with extensive osteolytic bone metastases mimicked Multiple Myeloma: A case report**

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**Introduction:** Occult primary malignancy usually manifested itself as metastases or secondary-paraneoplastic phenomena. Although occult breast cancer usually presented as axillary lymphadenopathy, it could also have other rare manifestations, such as extensive osteolytic lesions which is the typical manifestation of Multiple Myeloma (MM). The similarity in radiological findings made differential diagnosis extremely difficult, especially when primary breast lesion was undetectable by ordinary diagnostic tools. Here we present a rare occult breast cancer case detected only by positron emission tomography (PET) with extensive osteolytic bone metastases that mimicked MM.

**Case description:** A 48-year-old female patient presented with heart burn, dyspnea and lower back pain. Skeletal survey revealed extensive osteolytic lesions including skull, spine and pelvis (Figure 1A-C), which were highly suspicious for MM. However, there were no Ben-Jones protein in urine and blood sample with mild proliferative bone marrow and normal plasma cell phenotype. Hence, after ruling out MM, PET scan was arranged to screen potential malignancies. It revealed a high uptake lesion in left breast with SUV 2.7 (Figure 1D) and multiple metastases. Although the breast lesion had a high SUV on PET, it was undetectable by mammography and ultrasound.

**Conclusions:** Extensive osteolytic lesions could be the first symptom of occult breast cancer. PET could be a useful tool for occult malignancies to identify primary lesion. Due to the relative low sensitivity of PET in detection of primary breast lesion, clinicians should be aware of occult breast cancer when PET revealed no implications for primary sites. Tissue biopsy of metastatic diseases could be another option to confirm the diagnosis.

**Take-home message:**

1. Extensive osteolytic lesions could be the first symptom of occult breast cancer.
2. PET could be a useful tool to identify primary lesion of occult malignancies.
3. PET has a relative low sensitivity of primary breast lesion, negative result could not rule out occult breast cancer.
4. Tissue biopsy of metastatic diseases could be another option to confirm the diagnosis.

Figure 1 (A) Pelvis X-ray showed disseminated “punched-out” holes, which was the typical finding of multiple myeloma; (B) skull X-ray presented similar radiological appearance with multiple myeloma; (C) CT scan of spine revealed extensive osteolytic lesions; (D) PET scan detected high uptake lesion in left breast, SUVmax 2.7 (Arrow)

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