Ewing sarcoma of the proximal femur misdiagnosed as acute osteomyelitis for 4 years.

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Introduction:
Ewing Sarcoma can clinically and/or radiologically mimic other pathologies, including typically (sub)acute osteomyelitis. A delayed or wrong diagnosis may have dramatic consequences for the patient. We report the case of a 24 years old patient whose Ewing sarcoma of the proximal femur misdiagnosed as acute osteomyelitis 4 years earlier.

Case presentation:
A 24 years old patient presented at emergency room with haemoptysis. Chest plain film revealed multiples bilateral opacities. Extensive workup showed multiple mediastinal, pulmonary and pleural masses, retroperitoneal and inguinal adenopathies as well as a right femoral mass. Four years earlier, the patient had been complaining of prolonged pain in the right proximal thigh, during both activities and rest. No fever was objectified, but the patient felt sweat. A light inflammatory syndrome was present (CRP was 22 mg/l and leucocytosis 15.9 G/l). Imaging (plain film, MRI and CT) was considered as consistent with acute osteomyelitis. Ewing sarcoma was evoked as a potential differential diagnosis. Surgical trepanation and sampling did not reveal any germs. No pathologic analysis was performed. The patient was treated for acute osteomyelitis of unknown origin, with transient improvement of the symptoms. After one year, the patient was lost to follow-up, until he presented at emergency room with haemoptysis. He had never been able to walk on full weight-bearing for the past 4 years. Transbronchic and femoral biopsies confirmed the diagnostic of stage IV Ewing sarcoma of the right proximal femur. The patient was treated according to Euro-Ewing protocol with 6 cycles of neoadjuvant chemotherapy, followed by „en bloc“ resection and reconstruction with tumoral hip arthroplasty, 6 cycles of adjuvant chemotherapy and pulmonary radiotherapy (18 Gy), with an excellent clinical but poor pathological response to treatment (60% viable cells). At the end of the treatment, there was no evidence of residual disease.

Discussion
Ewing sarcoma is a highly malignant tumour, for which early diagnosis is a key prognostic factor. The actual five-year survival rate for patients with localized disease is 65-75%, while it is under 30% for those with metastases at diagnosis. Considering the present case, and in order to prevent such dramatic diagnosis failure, one should put in doubt the diagnosis of osteomyelitis when no germ is identified on sampling, even though around 10% of bone infections are of unknown origin. Reconsidering the diagnosis and performing new sampling should be discussed. Another critical point is the necessity to send material for pathologic analysis even when a biopsy is performed in the setting of suspicion of bone infection. If any doubt remains, difficult cases should be discussed in tertiary centres, where multidisciplinary teams (sarcoma centres) are available.

Keywords : Ewing sarcoma; misdiagnosis; acute osteomyelitis

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