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Case Report

Isolated muscle tuberculosis: exceptional location

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ABSTRACT

The authors report the exceptional case of isolated muscular tuberculosis affecting the anterior compartment of the right thigh in a 38-year-old man. The diagnosis was based on histology and GeneXpert. The subject received a surgical treatment followed by medical treatment for 6 months. The GeneXpert test has proved to be useful in the diagnosis of muscular tuberculosis. We have not found in the literature the use of GeneXpert in this type of localization of tuberculosis whose diagnostic is not always easy. Through the study of this case and a review of the literature, the authors review the pathogenesis of this particular affection as well as the diagnostic and therapeutic modalities.

Keywords: Isolated, GeneXpert, Muscle, Tuberculosis

INTRODUCTION

Tuberculosis is an infectious disease due to the bacillus of Koch that can affect several organs.[1] However isolated tuberculosis of the muscle is an exceptional entity even in countries with endemic tuberculosis like Morocco, whose diagnosis is not always obvious and can be delayed by waiting for the result of culture in a specific environment.[1,2]

We report an exceptional case of tuberculosis localized in the quadriceps femoris muscle in a 37-year-old man.

CASE REPORT

A 38-year-old man with no medical history, consulted for a swelling of the right thigh evolving since 5 months, associated with functional impotence. The patient didn't report night sweats or weight loss but described asthenia with a recent exposition to tuberculosis in the family.

The examination of the walking ability had found lameness with a reduction of the walking perimeter to a few steps. The inspection noted the presence of a large antero-external mass of the right thigh measuring 21 cm on its major axis without inflammation. It was a painless swelling during palpation with soft consistency. The examination of the inguinal areas was normal as well as the examination of the ipsilateral hip and knee. The examination of the lumbar spine was normal.

The ultrasound showed a well-defined homogeneous hypoechogenic image. CT confirmed the fluid nature of the intramuscular lesion measuring 200×90×180 mm. The pelvic X-rays didn't show any osteoarticular lesions as well as the dorso-lumbar scanner. Biology had reported a white blood cell count of 8020/mm^3 with a lymphocyte count of 1890/mm^3 and CRP of 120 mg/ml.

The intervention was carried out within 48 hours and consisted in drainage of the collection with resection of the abscess sheath. The search for BK by GeneXpert in the fluid was positive. The anatomopathological study confirmed the presence of epithelio-gigantocellular granulomas with caseous necrosis. The search for a primitive localization (chest x-ray and gastric tubing)

remained negative. Lowenstein-Jensen specific culture was positive but after 25 days. HIV serology was negative.

Figure 1: Clinical image showing swelling of the antero-external part of the right thigh.

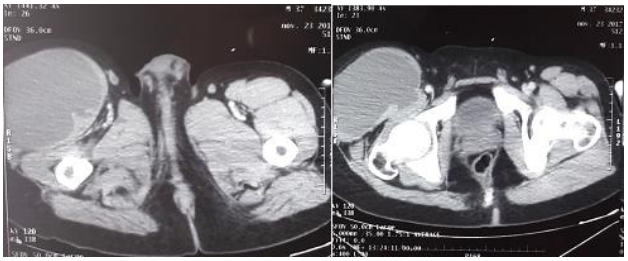

Figure 2: CT images showing the extent of the muscle injury.

The surgical treatment was supplemented by the administration of anti-bacillary drugs containing rifampicin, isoniazid, ethambutol and pyrazinamide. The administration was started upon receipt of the result of the genexpert for 2 months, relayed by a dual therapy with rifampicin and Isoniazid for 6 months. The evolution was favorable after a follow up of 14 months.

DISCUSSION

Tuberculosis is an endemic disease in developing countries and a real challenge for public health, especially in our country. The organ of choice is the lung due to airborne transmission. The involvement of the musculoskeletal system coexists with pulmonary involvement in 30% of cases.[2] According to the authors; musculoskeletal localization without associated tuberculosis lesions is 1 to 5%.[4] Muscle localization without skeletal or extra-skeletal involvement is very rare. Petter estimates it at 0.015% of all TB disease.[5] Taiwanese authors report a frequency of 2% in a study involving 1153 patients.[6] Very few cases have been reported in the literature and essentially, they describe localizations in the psoas, deltoid, triceps and gluteal. We found no cases reporting muscle tuberculosis of the quadriceps femoris muscle.

The muscle involvement usually comes from bone involvement as in the case of tuberculous spondylodiscitis but can also come from the synovial membrane of an adjacent joint or tendon sheath, more rarely haematogenous.[4,7,8]

The rarity of the muscular localization can be explained by the high concentration of lactic acid in this site, the absence of lymphatic tissue, the rich vascularization as well as the stage of advanced differentiation of the skeletal muscle.[8] Thus, some authors incriminate muscular trauma as contributing factors to the occurrence of muscular tuberculosis due to the architectural disorganization they cause.[9] Other authors suggest the possibility of direct muscle inoculation following intramuscular injection with BK-infected syringes.[3] Perez-Alonso reports that an immunosuppression context is common in these cases. Our patient reports no trauma or iatrogenic inoculation in the site and HIV research has returned negative.[10]

The few authors describing this pathology report that pain and swelling are the main clinical signs. The cardinal signs of tuberculous impregnation (fever, night sweats, asthenia, weight loss) are often present but not obligatory.

Perez-Alonso insists on the place of MRI with injection of the contrast medium as a diagnostic asset; he also describes PCR as a good means for rapid confirmation of diagnosis but insists that biopsy and culture remain the gold standard.[10]

The diagnosis of muscular tuberculosis remains difficult because of the rarity of the disease and requires a high degree of suspicion with a bundle of clinical, radiological and pathological arguments. It is important to discuss and especially eliminate certain pathologies in front of this table mainly of the sarcoma of the soft body parts, the hydatid cyst of the muscle, the myxomas and the hemangiomas.[11]

The medical treatment is based on anti-bacillary antibiotherapy made by administering rifampicin, isoniazid, ethambutol and pyrazinamide for 2 months relayed by a dual therapy with rifampicin and Isoniazid. The duration of the dual therapy varies according to the authors from 4 to 9 months. Only one case of relapse was described by Dendane who required the resumption of treatment for another 9 months.[3]

CONCLUSION

Isolated muscle tuberculosis remains an exceptional pathology whose pathogenesis is still poorly understood.

However, this pathology must be known and any suspicion of the latter must push the surgeon-clinician to carry out a surgical exploration with an anatomo-pathological examination whatever the seat of the muscular lesion to confirm or refute the diagnosis.

Finally, we believe that the GeneXpert test has an important place in the diagnosis of the confirmation of muscular tuberculosis and should be used more often to start the treatment as quickly as possible.

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