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Case Report

Cold Abscess of the Rectus Abdominis Muscle Revealing Pott's Disease in Young Immunocompetent Patients: A Report of Two Cases

Abcès Froid du Muscle Grand Droit Révélateur d'un Mal de Pott chez le Sujet Jeune Immunocompétent : À Propos de Deux cas

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ABSTRACT

A case of tuberculosis affecting the anterior abdominal wall is exceptional. The aim of this case report is to highlight the unusual presentation of tuberculosis in an atypical anatomical location, the rectus abdominis muscle, in two immunocompetent patients. Our first case was a 17-year-old immunocompetent adolescent girl presented with a painful abdominal wall mass evolving over 2 months. Physical examination revealed a 5 cm soft mass in the right rectus abdominis muscle, biological inflammatory syndrome, and a CT scan showed L4-L5 spondylodiscitis. The GeneXpert test was positive. The diagnosis was multifocal tuberculosis with localization in the rectus abdominis muscle. Twelve months of antituberculous treatment led to clinical and biological improvement. Then we had a 21-year-old man, with no medical history, presented with a chronic peri-umbilical abdominal mass. Examination revealed an 8x8 cm, non-tender, firm mass. Biological tests showed mild anemia and a high sedimentation rate. CT and ultrasound confirmed spondylodiscitis and a necrotic abscessed mass in the left rectus abdominis muscle. Abscess aspiration revealed GeneXpert positive fluid without rifampicin resistance. Antituberculous treatment led to rapid improvement and abscess regression. It is important to consider tuberculosis in the differential diagnosis of abdominal masses, even in young and immunocompetent patients.

RESUME

Un cas de tuberculose affectant la paroi abdominale antérieure est exceptionnel. Le but de ce rapport de cas est de mettre en lumière la présentation inhabituelle de la tuberculose dans une localisation anatomique atypique, le muscle droit de l'abdomen, chez deux patients immunocompétents. Notre premier cas était une adolescente de 17 ans immunocompétente présentant une masse douloureuse évoluant sur 2 mois au niveau de la paroi abdominale. L'examen physique a révélé une masse molle de 5 cm dans le muscle droit de l'abdomen, un syndrome inflammatoire biologique, et une tomodensitométrie a montré une spondylodiscite L4-L5. Le test GeneXpert était positif. Le diagnostic était une tuberculose multifocale avec localisation dans le muscle droit de l'abdomen. Douze mois de traitement antituberculeux ont conduit à une amélioration clinique et biologique. Ensuite, nous avons eu un homme de 21 ans, sans antécédents médicaux, présentant une masse abdominale péri-ombilicale chronique. L'examen a révélé une masse ferme de 8x8 cm, non douloureuse. Les tests biologiques ont montré une légère anémie et un taux de sédimentation élevé. La tomodensitométrie et l'échographie ont confirmé une spondylodiscite et une masse abcédée nécrotique dans le muscle droit de l'abdomen. L'aspiration de l'abcès a révélé un liquide positif au GeneXpert sans résistance à la rifampicine. Le traitement antituberculeux a conduit à une amélioration rapide et à la régression de l'abcès. Il est important de considérer la tuberculose dans le diagnostic différentiel des masses abdominales, même chez les patients jeunes et immunocompétents.

INTRODUCTION

Tuberculosis is an infectious disease caused by *Mycobacterium tuberculosis* [1]. Although cases of pulmonary, abdominal, and extra-abdominal tuberculosis are frequently reported, those affecting the anterior abdominal wall remain exceptional [2]. Intramuscular tuberculosis is a rare manifestation of extrapulmonary tuberculosis due to the low survival and multiplication rate of *Mycobacterium tuberculosis* in striated muscle [3]. Autopsy studies have revealed involvement of the abdominal wall in less than 1% of patients who died from tuberculosis, and only a few cases of anterior abdominal wall tuberculosis have been reported in the global literature [4]. The aim of this case report is to highlight the unusual presentation of tuberculosis in an atypical anatomical location, the rectus abdominis muscle, in two immunocompetent patients.

OBSERVATION

Observation 1

A 17-year-old adolescent girl, with a history of tuberculosis contact and no significant medical history, presented with a painful swelling on the abdominal wall. The mass had been evolving for 2 months in an afebrile context without general health deterioration or other associated visceral signs. Physical examination noted a well-preserved general state, stable hemodynamic parameters, and a normal body mass index of 22.6 kg/m². Abdominal examination revealed a 5 cm mass in the middle third of the right rectus abdominis muscle, tender on palpation, soft in consistency, and non-adherent to deep or superficial planes. Other abdominal quadrants and spinal examinations were unremarkable. Biological analyses revealed an inflammatory syndrome with a C-reactive protein (CRP) level of 58 mg/dl and normocytic normochromic anemia. Renal and liver function tests were normal, as were hepatitis and HIV serologies. The GeneXpert test on sputum was positive without rifampicin resistance. Abdominal CT scan revealed a mass syndrome involving the right rectus abdominis muscle, measuring 94x41 mm, at the lumbosacral junction and vertebral column **(Figure 1).** Additionally, L4-L5, L5-S1 spondylodiscitis associated with epiduritis was noted **(Figure 2).**

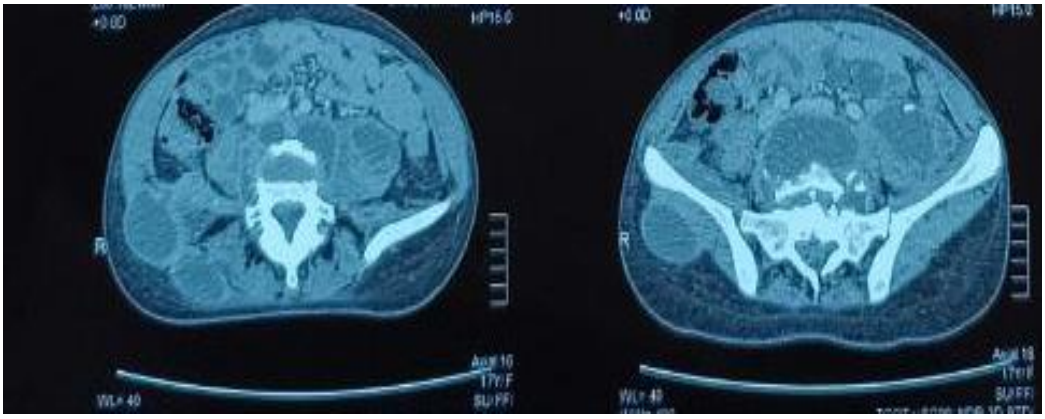

Figure 1. Abdominal CT scan revealed a mass syndrome involving the right rectus abdominis muscle, the lumbosacral junction and vertebral column

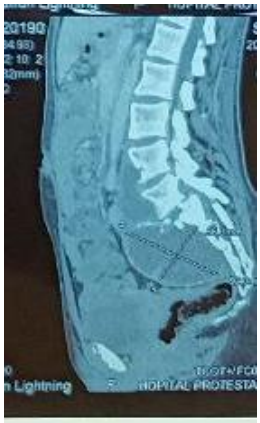

Figure 2. L4-L5, L5-S1 spondylodiscitis associated with epiduritis

Given this clinical picture, a diagnosis of multifocal tuberculosis with spinal and muscular localization was made. The patient was started on antituberculous treatment for twelve months, leading to significant clinical and biological improvement.

Observation 2

A 21-year-old male gold miner, with no significant personal or family medical history, presented with an abdominal mass evolving over the past 6 months. This mass, located in the periumbilical region, appeared progressively without any history of trauma, fever, cough, malaise, or pain. There was no history of contact with tuberculosis cases. Clinical examination revealed a well-preserved general state, stable hemodynamic parameters, and a normal body mass index of 23.0 kg/m². Abdominal examination revealed a non-tender, firm 8x8 cm mass in the periumbilical region, with smooth, ill-defined margins and normal overlying skin. The mass was firm on palpation and mobile with respiration. Other abdominal quadrants and the spine examination were unremarkable. Biological investigations showed: hemoglobin at 11.2 g/dl; total white blood cell count of 9200/mm³ with 58% neutrophils, 38% lymphocytes, and 4% eosinophils; and an erythrocyte sedimentation rate of 75 mm. Hepatitis and HIV serologies were negative, and the rest of

the biological workup was unremarkable. Abdominal CT scan, searching for suppuration, incidentally revealed mirror erosions between the L4-L5 vertebrae with involvement of the left psoas muscle, confirming spondylodiscitis. Abdominal ultrasound showed an 8.5x8.5 cm mass in the left rectus abdominis muscle with a necrotic liquefied center in the anterior abdominal wall **(Figure 3).**

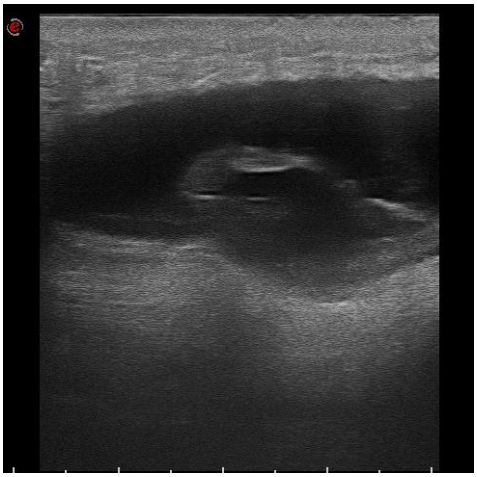

Figure 3.Abscess of the right rectus muscle on the left side

Aspiration of the mass yielded a turbid fluid, positive for the GeneXpert test without rifampicin resistance **(Figure 4).**

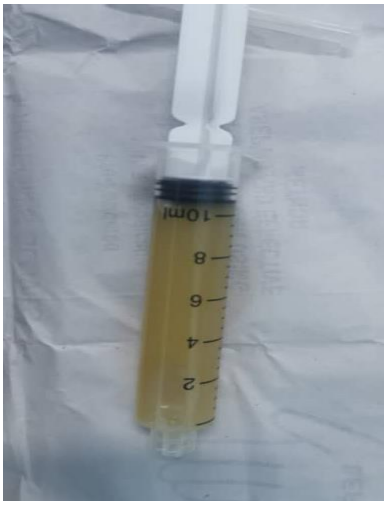

Figure 4.The fluid aspirated from the abscess is cloudy.

There were no other abdominal localizations. The diagnosis was a tuberculous abscess of the anterior abdominal wall associated with infectious tuberculous spondylodiscitis of the L4 and L5 vertebrae, with involvement of the right psoas and rectus abdominis muscles. Antituberculous treatment was initiated, and the patient showed rapid improvement over the following days. After 8 weeks of antituberculous treatment, he responded well, and the abscess significantly regressed. Antituberculous treatment was continued for 10 months.

DISCUSSION

Historically, tuberculosis has been one of the leading causes of human mortality and remains a significant cause of infectious death worldwide. Although the incidence and mortality of tuberculosis have declined over the past decade, the global burden remains substantial, with more than 10 million new cases annually [2]. Despite its preventable and curable nature, tuberculosis caused the death of 1.2 million people among HIV-negative patients in 2019 [3]. The cases presented illustrate a rare and atypical manifestation of tuberculosis, namely involvement of the anterior abdominal wall in young immunocompetent patients. Intramuscular tuberculosis is particularly rare due to several protective factors intrinsic to striated muscle, such as high lactic acid content, the absence of reticuloendothelial and lymphatic tissue, abundant vascularization, and the highly differentiated state of muscle tissue [4]. This anatomical peculiarity partly explains the low incidence of this form of tuberculosis. The two cases presented demonstrate the diagnostic difficulty posed by an abdominal mass without typical symptoms of tuberculosis. Indeed, only a few cases of tuberculosis with abdominal wall involvement have been reported in the literature [5]. These patients often presented with an asymmetrical abdominal swelling without spinal pain. Imaging, particularly contrast-enhanced computed tomography, revealed abscessed lesions, which were also observed in our cases. The dissemination of tuberculosis into the muscle can occur through direct extension from a neighboring structure or via the hematogenous route [6]. In our observations, it appears that primary muscle infection occurred without any evidence of immunodeficiency, which is remarkable. The atypical location and non-specific clinical presentation make the diagnosis particularly challenging and underscore the importance of considering tuberculosis in the differential diagnosis of abdominal masses, even in immunocompetent patients [7]. Management of this entity primarily relies on antituberculous treatment. In our cases, the patients responded well to this treatment, with significant clinical and biological improvement. Surgical intervention, in the form of ultrasound- or computed tomography-guided aspiration or open drainage, is generally reserved for patients not responding to medical treatment [8]. Our patients did not require such interventions, responding favorably to antituberculous treatment alone.

CONCLUSION

In conclusion, these cases highlight the importance of considering tuberculosis in the differential diagnosis of abdominal masses, even in young and immunocompetent patients. Early recognition and management of this rare manifestation of tuberculosis can significantly improve patient outcomes. These observations also emphasize the need to further sensitize clinicians to atypical presentations of tuberculosis to ensure prompt diagnosis and treatment.

Conflict of Interest

None

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