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Ano-perineal Suppurations of Tuberculous Origin: Study of 19 Cases

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ABSTRACT

Anoperineal localization of digestive tuberculosis is uncommon. Suppurative forms, particularly abscesses and anal fistulas, pose diagnostic and therapeutic challenges.

Aim: To describe the epidemiological, clinical, paraclinical, therapeutic, and outcome characteristics of suppurative anoperineal tuberculosis.

Materials and Methods: This is a retrospective descriptive study of anoperineal tuberculosis cases collected over a 12-year period, from July 2013 to July 2025, including all patients managed for anal fistula and/or anal abscess.

Results: Nineteen cases of anoperineal tuberculosis were identified, including 18 cases of anal fistulas and 1 case of anal abscess. The diagnosis was confirmed in 9 patients and considered probable in 10 others. Management was medico-surgical, combining anti-tuberculous therapy with surgical procedures: drainage of fistulas using setons in 17 patients, drainage of an anal abscess in 1 patient, and fistulotomy in 1 patient. Outcomes were favorable in the majority of patients. One recurrence was observed after 5 years of follow-up. Two patients still had persistent perianal collections with fistulas and underwent surgical re-exploration, while three patients were lost to follow-up.

Conclusions: Anoperineal tuberculosis is a rare and complex form of extrapulmonary tuberculosis, often difficult to diagnose. Appropriate medico-surgical management allows effective healing. Preventive measures remain essential to reduce morbidity and limit disease transmission.

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KEYWORDS:
Tuberculosis, Anoperineal fistula, Anal abscess, MTB PCR, Antituberculous therapy

INTRODUCTION

Ano-perineal involvement in digestive tuberculosis is relatively uncommon, despite the endemic nature of this disease in Morocco. Suppurative forms, particularly abscesses and anal fistulas, pose diagnostic and therapeutic challenges.

Therapeutic management combines anti-tuberculous quadritherapy with surgical treatment of anal fistulas.

The aim of our study is to describe the epidemiological, clinical, paraclinical, therapeutic, and outcome aspects of suppurative ano-perineal tuberculosis.

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MATERIALS AND METHODS

This is a retrospective descriptive study of ano-perineal tuberculosis cases collected in the Gastroenterology Department of the Ibn Rochd University Hospital Center in Casablanca over a 12-year period, from July 2013 to July 2025, including all patients managed for anal fistula and/or anal abscess.

The definitive diagnosis of ano-perineal tuberculosis was established based on the presence of epithelioid and multinucleated giant-cell granulomas with caseous necrosis on histopathological examination and/or a positive tissue PCR test for *Mycobacterium tuberculosis* (BK). A probable diagnosis was considered in the presence of epithelioid and multinucleated giant-cell granulomas without caseous necrosis on histopathological examination, or based on epidemiological, anamnestic, and clinical criteria, along with a favorable response to anti-tuberculous treatment.

An evaluation including a chest X-ray, Quantiferon test, tuberculin skin test (TST), and the search for *Mycobacterium*

tuberculosis in sputum was performed in the majority of patients. Medical data were collected from archived records while ensuring patient confidentiality.

RESULTS

During the study period, 19 cases of ano-perineal suppurations of tuberculous origin were collected, including 18 cases involving anal fistulas and 1 case of anal abscess. The mean age was 39.2 years, with a sex ratio of 3.75 and a marked male predominance (78.9%). Six patients (31.6%) had recent contact with tuberculosis, and 3 patients (15.8%) had a history of tuberculosis (one case of osteoarticular tuberculosis and two cases of pulmonary tuberculosis). None of the patients had HIV infection.

The diagnosis of ano-perineal tuberculosis was confirmed in 9 patients. Among them, 3 cases (15.8%) showed epithelioid and multinucleated giant-cell granulomas with caseous necrosis on histopathological examination. Tissue PCR for *Mycobacterium tuberculosis* (BK) was positive in 6 cases (33.3%), including one case associated with granuloma with caseous necrosis. Additionally, acid-fast bacilli were detected in pus from the fistulous opening in one patient (isolated anal abscess).

The diagnosis was considered probable in 10 patients, based on the presence of epithelioid and multinucleated giant-cell granulomas without caseous necrosis in 11 patients (57.8%). The tuberculin skin test (TST) was positive in 3 patients. The Quantiferon test was positive in 12 cases (66.7%), including 3 patients with confirmed tuberculosis. These findings were supported by strong epidemiological, anamnestic, and clinical criteria, as well as a favorable response to anti-tuberculous treatment.

All patients presented with proctalgia, and 78.9% (15 patients) had associated purulent perianal discharge. Proctological examination and intraoperative findings revealed a polyfistulous perineum in 63.2% of patients (Figure 1). Surgical exploration showed that most fistulous tracts were trans-sphincteric.

Colonoscopy identified one case of associated intestinal tuberculosis. In addition, pulmonary involvement was found in 2 patients, with detection of *Mycobacterium tuberculosis* in sputum, as well as one case of lymph node tuberculosis.

All patients received combined medical and surgical management. Anti-tuberculous therapy was initiated according to the Moroccan national tuberculosis control protocol (Rifampicin, Isoniazid, Pyrazinamide, and Ethambutol). Surgical treatment consisted of drainage of fistulas using setons in 17 patients (Figure 2), drainage of an anal abscess in one patient, and fistulotomy in one patient.

Outcomes were favorable in 68.4% of patients, characterized by healing of fistulous openings (Figures 3 and 4), weight gain, absence of fever, and resolution of local symptoms. Recurrence was observed in one patient (5.3%) after 5 years of follow-up. Two patients (10.5%) continued to have fistulized perianal collections and underwent repeat surgical exploration. Three patients (15.8%) were lost to follow-up before completion. No deaths were recorded during the study period.

Figure 1 : Tuberculous anal fistula with purulent discharge.

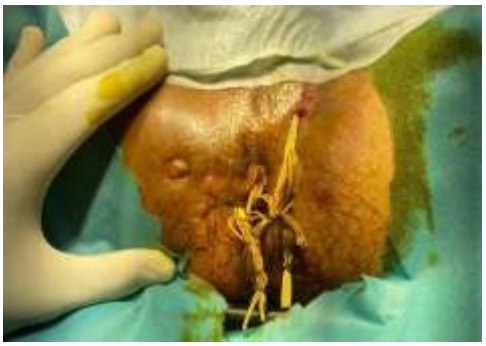

Figure 2: Polyfistulous perineum associated with tuberculous anal fistulas under drainage in a patient receiving anti-tuberculous therapy.

Figure 3 : Drying of anal fistulas drained with setons in a patient undergoing anti-tuberculous therapy

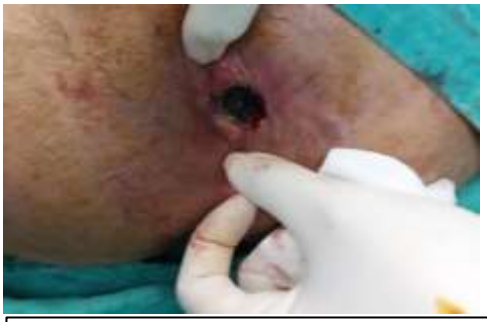

Figure 4: Fistulotomy (laying open of the fistulous tract) in a patient undergoing anti-tuberculous therapy.

DISCUSSION

Our study describes the epidemiological, clinical, paraclinical, therapeutic, and outcome characteristics of ano-perineal tuberculosis.

Ano-perineal tuberculosis remains a public health concern in several endemic regions. In Asia, countries such as India, Bangladesh, and South Korea have recently reported series confirming the persistence of ano-perineal tuberculosis, with varying numbers of cases [1,2,3,4]. In Europe, this entity is now rare, although isolated cases are still reported [5]. In Morocco, several series confirm this low incidence, with variations depending on centers and study periods [6,7]. In our series, 19 cases of ano-perineal tuberculosis were recorded over a 12-year period, corresponding to an average annual frequency of 1.9 cases. It mainly affects young adults with a clear male predominance [8], which is consistent with our findings: mean age was 39.2 years with a male-to-female sex ratio of 3.75. Several studies show that precarious living conditions and low socioeconomic status are strongly associated with ano- perineal tuberculosis [9].

Ano-perineal tuberculosis may present in different forms and sometimes with atypical and non-specific clinical features, making preoperative diagnosis challenging. It mainly presents in two forms. The chronic form, the most frequent, observed in 80–91% of cases, manifests as an anal fistula connecting an internal and an external opening. The acute form presents as an abscess, either intramural or at the anal margin [6,10,11,12]. Cases of tuberculous anal fissure have been reported in the literature, highlighting that any persistent fissure not responding to standard treatment or showing atypical features (indurated or budding edges) should raise suspicion of tuberculosis and justify histological sampling for confirmation [13]. Other less typical clinical presentations have also been reported, such as pilonidal sinus or anal ulceration [14,15]. In our series, the clinical presentation was dominated by anal fistula in 94.74% of cases (including polyfistulous perineum in 63.16%) and anal abscess in 5.26%, often associated with purulent perianal discharge (78.9%). Constitutional symptoms related to tuberculosis infection such as anorexia, fever, and weight loss are not always present. In the absence of pathognomonic signs, persistence or recurrence of anal suppuration despite properly conducted surgical treatment should raise suspicion of a tuberculous etiology, particularly in endemic countries, where systematic screening for tuberculosis is recommended for all pus and tissue samples from anal fistulas [16].

Bacteriological diagnosis of perineal tuberculosis remains difficult due to the absence of a test combining high sensitivity and specificity. However, it remains a key diagnostic element.

Confirmation relies on the identification of *Mycobacterium tuberculosis* in pus from a fistulous or anorectal abscess discharge [17]. Detection can be performed by direct examination (Ziehl–Neelsen staining, often negative) or culture on specific media (Lowenstein–Jensen), which is the reference method but requires a long incubation period (about 6 weeks). In our series, direct detection of acid-fast bacilli from fistulous pus was positive in 5.3% (1 patient).

Histological examination is the gold standard for confirming the tuberculous origin of an anal fistula. Anatomopathological analysis of fistulous external openings and/or resected fistulous tracts shows epithelioid and multinucleated giant-cell granulomas with caseous necrosis, which is considered pathognomonic [14,18–23]. In our series, 57.8% of patients had epithelioid and giant-cell granulomas without caseous necrosis, while only 15.8% showed caseous necrosis. Molecular techniques such as PCR or GeneXpert allow rapid detection (within 48 hours) and specific identification of the *Mycobacterium tuberculosis* complex with sensitivity ranging from 80 to 100% [19,20,21]. In our study, tissue PCR for BK, performed on the skin margin surrounding the external fistulous opening sampled intraoperatively, was positive in 33.3% of cases (6 patients).

Interferon Gamma Release Assays (IGRAs) are useful, rapid, and specific tests for tuberculosis diagnosis, although they do not distinguish between latent infection and active disease. These tests are particularly helpful in differentiating anal tuberculosis from perianal Crohn's disease, but their use is limited by cost [7,22]. In the series by Young Choi [4], IGRA was positive in all six patients studied. In our series, 66.7% of patients had a positive result.

The incidence of tuberculosis, particularly in extrapulmonary forms, is higher in immunocompromised and HIV-positive patients [23]. In our series, only one patient (5.3%) was immunocompromised due to type 2 diabetes, and no HIV cases were identified.

Endoanal ultrasonography [24] and pelvic MRI have become essential reference imaging tools in the diagnostic and preoperative workup, particularly in complex, recurrent forms or those associated with deep anorectal suppuration. Pelvic MRI allows accurate mapping of fistulous tracts, detecting multiple branches, supralevator extensions, abscess collections, and horseshoe configurations [12]. In our series, MRI was performed in 36.8% of patients and mainly showed trans-sphincteric and sometimes complex fistulas. Chest X-ray is a first-line complementary test in the evaluation of ano-perineal tuberculosis to detect active or sequelae of pulmonary involvement.

Colonoscopy is a useful complementary diagnostic tool, although findings are often normal in isolated perineal tuberculosis. It is not systematic and is indicated when intestinal involvement is suspected or when there is diagnostic uncertainty, particularly with Crohn's disease [25]. In our series, colonoscopy performed in one patient with chronic diarrhea revealed associated intestinal tuberculosis.

The diagnosis of ano-perineal tuberculosis is not always

straightforward and may require a combination of epidemiological, clinical, histological, radiological, and evolutionary evidence, especially in cases of non-caseating granulomas with negative PCR and bacteriological tests, as seen in some of our patients [7].

Several differential diagnoses must be considered, the most important being perianal Crohn's disease (CD). Fistulas associated with CD generally occur in younger patients (median age: 23 years) compared to tuberculous fistulas (median age: 37 years). Fistula characteristics and recurrence rates are similar in both diseases [4]. However, histopathology shows that tuberculous fistulas more frequently present caseating granulomas (62% vs 0% in CD), whereas CD fistulas are associated with more non-caseating granulomas (58% vs 34% in tuberculosis) [4]. Other differential diagnoses include cryptoglandular fistula or abscess, lymphogranuloma venereum, actinomycosis, anal fissure, immunodeficiency states, sexually transmitted infections (chlamydia, gonorrhea, syphilis), and anorectal cancer [26–31].

Treatment of tuberculous anal fistulas is medico-surgical. It is based primarily on quadruple anti-tuberculous therapy (Rifampicin, Isoniazid, Pyrazinamide, and Ethambutol) for a minimum duration of 6 months, with possible extension depending on fistula complexity and clinical response [4,15,32]. Some series report longer durations, up to one year or even 18 months in complex cases [10,21,33]. In our study, the mean duration was 7 months (ranging from 6 to 14 months).

Surgical management should favor a conservative approach. As a first-line option, seton drainage is the preferred strategy, especially in high or complex fistulas. This technique allows prolonged drainage, reduces local inflammation, and preserves sphincter function [33]. In our series, elastic seton placement was the main therapeutic modality (89.5% of cases).
More invasive procedures such as fistulotomy or fistulectomy should be reserved for low and simple fistulas, ideally after initiation of anti-tuberculous therapy [33].

After medical treatment and adequate drainage with seton, additional conservative techniques may be considered depending on fistula height and complexity, including staged seton removal, fistulotomy in one or multiple stages, advancement flap, or biological glue [21,34,35]. In our study, patients underwent fistulous tract laying-open procedures in one or more stages depending on sphincter involvement, with an average of 2.84 surgical procedures per patient.

CONCLUSION

Ano-perineal tuberculosis is a rare and complex form of extrapulmonary tuberculosis, often underdiagnosed and difficult to confirm. A high index of clinical suspicion combined with appropriate medico-surgical management allows effective healing with a low recurrence rate. Preventive measures, both general and specific to ano-perineal tuberculosis, are crucial to reduce morbidity and limit disease transmission.

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