Anal tuberculosis: Report of a case and review of literature

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Abstract  Purpose: A case of anal tuberculosis with a perianal growth and anal ulceration is presented. The clinical features and the diagnostic problems along with increasing incidence of new cases of tuberculosis are discussed.
Methods: The diagnosis, management and outcome of an adult male patient, who presented with perianal lesions are described.
Results: On a four drug anti-tuberculous regimen, the symptoms improved and perianal lesions healed.
Conclusion: Anal tuberculosis although extremely rare, can be manifested in various forms. A high index of suspicion of tuberculosis should be borne in mind in all cases of perianal lesions with vague etiology or with diagnostic problems, which should be confirmed by histological and bacteriological analysis and treated specifically.

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Introduction

Tuberculosis (TB) was a major health problem worldwide and it still remains so.1 Overall, one-third of the world’s population is currently infected with the TB bacilli.2 Gastro-intestinal TB forms only less than 1% of cases of all sites taken together.3–7 Anoperineal disease is extremely rare (1% of digestive tract disease),4,6,8 particularly in the UK.9 Only two cases of the condition are reported in the UK within the last 22 years.9,10 Now we are able to report another case.

Report of a case

An 82-year-old Caucasian gentleman presented with constipation, anorectal pain and perianal ulcerated growth, faecal incontinence, rectal bleeding, weight loss, anorexia and an ulcer in the right groin for the past 3 months. He was treated for pulmonary tuberculosis 50 years ago and was treated with anti-tuberculous medications (p-amino salicylic acid, streptomycin and isoniazid) and had left posterolateral thoracotomy and lobectomy. There was no evidence of lymphadenopathy at that time and he was cleared of tuberculosis after the treatment. He was not on any immunosuppressive medications nor had any coexisting immunocompromising status.

On examination, he was pale, slim, apyrexial and had generalized maculopapular erythematous rashes all over the trunk and back (Fig. 1). There was an ulcerated,
enlarged lymph node in the right groin measuring 2 × 3 cm with undermined edges (Fig. 2). Local examination of the perineum showed a wide posterior ulceration of the anorectum in the midline extending about 4 cm into the anorectum and 4 cm externally from the anal verge and it was about 3 cm in breadth. A small opening of a sinus tract to the left of the midline about 5 cm from the anal verge at the 3 o’clock position was also seen. There was also a large warty growth of 5 × 4 cm in size, at the right perianal margin at the 11 o’clock position, extending to the right buttock (Fig. 3). Thickening, hyperkeratosis, erythema and scarring of the surrounding skin were also noted. On digital rectal examination, the anal sphincter was lax. No rectal mass was palpable.

Initial blood tests showed Hb of 9.3 and ESR of 40 mm. Serum tumour markers were not elevated. Viral serology was negative including HIV. CT of chest, abdomen and pelvis showed left thoracoplasty, posterior midline anal fissure with marked thickening of the tract and lymph nodes in the right groin. Biopsies were taken from the groin ulcer and perineal lesion and surprisingly, showed severe tuberculoid granulomatous inflammation (Fig. 4). Ziehl-Neelsen staining was positive for acid fast bacilli (Fig. 5). Culture swabs from the groin and perineal ulcer confirmed mycobacterium tuberculosis. He was started on isoniazid, rifampicin, pyrazinamide, ethambutol and pyridoxine. Gastroscopy was normal and barium enema showed only diverticular disease.

The patient was followed up in the clinic 2 monthly and by the second visit the inguinal ulcer was almost completely healed (Fig. 6) as well as the cutaneous lesions over the back (Fig. 7). The perianal lesions showed marked improvement (Fig. 8). He continued to improve and by 6 months, all lesions were completely healed and he had put on some weight. Anti-tuberculous drugs were stopped after 6 months.

Discussion

Although a significant decrease in TB morbidity and mortality had been reported worldwide until the 1980s, increasing incidence rates have been noted in recent years, mainly because of the acquired immunodeficiency syndrome (AIDS) epidemic.1 It is estimated that 2 million deaths resulted from TB in 2002. Someone in the world is newly infected with TB bacilli every second.2 Statistical data show that 6889 cases of TB were notified in the UK alone, in 2002, of which 1365 were new smear positive cases.11 The epidemic of human immunodeficiency virus (HIV), the appearance of multi-drug resistant bacilli, large
immigrant populations and poverty, all play their part in the increased incidence of the disease, worldwide.²

Extrapulmonary TB can affect any organ, with or without pulmonary involvement and can be diffuse. It is more frequent in immigrants and subjects with immunosuppression, especially those infected with HIV.⁵,¹²,¹³ In many Western European countries and in the USA, over 50% of TB cases notified in 2001 were among people who were not born in the country and/or were not citizens of the country.² HIV and TB form a lethal combination, each speeding the other’s progress.² Koch’s bacillus stimulates the propagation of HIV through released growth factors.¹⁴ The immunosuppression produced by HIV causes deterioration in the functions of lymphoreticular cells, leading to reactivation of dormant mycobacteria which are usually localized in the pulmonary or digestive system.¹³ The prevalence of anal lesions is high as a result of AIDS and is estimated as between 16 and 34%.¹⁵ Although the incidence of TB is increasing in these patients, especially in extrapulmonary forms, the anorectal region is only exceptionally affected.¹⁶ The theory that TB can spread via sexual transmission, during anal intercourse¹⁴ was also never proved.

Anal TB is commonly seen in men (4:1 ratio) and in the 4th decade of life and occurs secondary to or co-existing with a pulmonary lesion,⁵,⁶,¹⁷,¹⁸ which may be revealed later² or may not always be apparent.¹⁹ The mode of spread is by endogenous source, usually by swallowing of respiratory secretions with large amount of bacilli.⁶ Other modes are haematogenous spread, lymphatic spread from regional lymph nodes and direct extension from neighbouring areas.⁵,⁶,²⁰ Primary lesions are rare.²⁰

The different morphological forms of anal TB are ulcerative, verrucaus, lupoid and miliary.²¹,²² The most common is the ulcerative form⁹,¹⁹,²³,²⁴ and typically presents as a superficial ulceration, with a haemorrhagic necrotic base that is granular and covered with thick purulent secretions of mucous.²⁵ Tuberculous fissure-in-ano has been included in this group.⁹ However, there are a few surgical series with perianal TB presenting as fistula-in-ano.⁵,¹⁷,²³

The diagnosis of anal TB is difficult⁸ and may be unexpected²⁶ as happened in the case reported here, where it mimicked a neoplasm. Positive diagnosis depends on histologic or bacteriologic analysis. The typical histologic lesion is the epitheloid and giant cell tubercle around a zone of caseous necrosis, with the pathognomonic feature being caseation. Bacteriological analysis is by identification of Koch’s bacilli by direct examination (Ziehl–Neelsen stain) and culture.¹⁶ The diagnosis is supported by the clinical response to anti-tubercular therapy.²⁷ Newer tests undergoing evaluation include enzyme-linked immunosorbent assays for the diagnosis of digestive tract TB and appear to be highly sensitive and specific.²⁸ The detection of mycobacterial DNA in clinical samples by polymerase chain reaction (PCR) is
a promising approach for the rapid diagnosis of tuberculous infection, which can detect the presence of bacterial DNA in 48 h with high sensitivity and specificity, when testing several samples. In the modern era of genetics, the day is not far off when DNA chip-based hybridization assays will instantly reveal mycobacterial infections.

The major differential diagnosis for anal TB is Crohn’s disease and the other conditions which may be confused with anal TB are venereal lesions, neoplasms, foreign body lesions and granuloma pyogenicum, amoebiasis, syphilis and sarcoidosis.

The initial treatment of anal TB is the specific antibiotic therapy. We used the multi-drug regimen to treat the lesion. Since multi-drug resistant TB is very low in the UK, treatment was by the standard four drug regimen. All these drugs will instantly reveal mycobacterial infections.

A surgical approach will only be required in the presence of some clinical complications such as intestinal obstruction or abscess and in the case of tuberculous fistula-in-ano. However, in the case reported, complete remission of the lesion was achieved. Similar excellent results were obtained in other cases of tuberculosis reported.

Unfortunately, we could never identify what was the reason behind the recurrence of TB, or why the lesion had a particular distribution along the skin and anal canal, in the reported case. He never had any contact with another case and there was no history of sexual transmission or evidence of immunosuppression. The only likely pathogenesis is the recurrence of TB from the pulmonary primum, but there was no evidence of milky TB. Although the clinical picture was classical of TB in this particular case, it may not always be the case.

Conclusion

Any intractable perianal disease, especially in the presence of inguinal lymphadenopathy, should be suspected for a tuberculous lesion, as diagnosis based on the clinical picture is often difficult. Histopathological and microbiological investigations are mandatory to confirm the diagnosis and specific treatment should be given.

References