

Tuberculosis: A Rare Entity of Anal Disease

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Abstract: Tuberculosis (TB) is a common infectious granulomatous disease in Malaysia, especially Sabah. Anal TB is extremely rare, approximately less than 1% of the cases. It can present as fistula-in-ano, ulcer, stricture, and even mass. The diagnosis can be established via bacteriological, histopathological and molecular methods; even Mantoux test, chest radiography and ESR occasionally are not helpful. Anti-TB medication is the primary line of treatment as surgery alone is inadequate. We present a case of anal TB presented with nodular mass with ulcerated surface mimicking malignancy, our management strategies and review of the literature.

Keywords: Extra-pulmonary, anal tuberculosis, anal mass, ulcerated mass.

I. INTRODUCTION

Tuberculosis (TB) is a common infectious granulomatous disease. It is caused by Mycobacterium tuberculosis. It has become a major health problem worldwide, especially in developing countries. Based on our local study, TB is endemic in Malaysia and is still a public health issue, especially in Sabah, contributing one-third of the total cases in the country. [1] Majority of TB cases are pulmonary in origin with extra-pulmonary involvement consisting of only 11% of all cases. [2] Abdominal TB can affect any organ along the gastrointestinal tract. Anal involvement is very rare, approximately 0.7% of the cases. [3] In endemic regions, anal TB can present with fistula-in-ano, ulcer, stricture, and surprisingly malignancy-mimicked mass. In view of the emergence of multidrug-resistant bacilli and easy susceptibility among immunocompromised individuals, the treatment plan has turned complicated and challenging. It is essential to diagnose anal TB in clinically suspected cases. Without anti-TB, surgical intervention alone is non-beneficial and worthless. Hereby, we present a case of anal TB presented with nodular mass with superficial ulcers mimicking malignancy and share our experience to manage such unique entity.

II. SUMMARY

This is a 64-year-old, female Philippines immigrant who was previously well, presented with anal mass with painful defecation. Apart from that, she also complained of weight and appetite loss, painful defecation with occasional blood-stained stool for the past 6 months. There were also spurious diarrhea with occasional constipation and tenesmus. Due to worsening pain, she was forced to seek medical attention. Otherwise, she denied any previous history of TB or contact, fever, night sweats and chronic dry cough. There is no family history of malignancy. She is a non-smoker and non-alcohol consumer. She denied any anal intercourse.

General examination showed a cachexic lady who appeared lethargic and pale. She was afebrile with her blood pressure measuring 110/65mmHg, pulse rate of 65 beats per minute, not tachypnoeic with oxygen saturation of 100% in room air. Perineal examination revealed a firm, nodular mass arising from the anal verge at 6 o'clock position with inflamed surrounding skin. There were multiple superficial ulcers on the mass with varying areas of soft and firm base, some appeared to be necrotic. The lesion was tender to touch. Digital rectal examination was omitted due to pain. There was no lymphadenopathy. Chest and abdominal examination revealed no significant findings. Due to incomplete assessment,

examination under anaesthesia was performed. Intraoperatively, there was an anal mass 2x6x3cm (width x length x anteroposterior) from the anal verge with multiple ulcers, extending proximally about 4cm. There were no pseudopolyps or fistula-in-ano. In view of diagnostic ambiguity, biopsy was taken and sent for histopathological examination.

HIV screening was negative. Total white cell was slightly raised at $13.4 \times 10^9/L$; Haemoglobin 9.0g/dL; Platelet $324 \times 10^9/L$. Mantoux test was 10mm in size. Other blood results were unremarkable. Chest radiography showed no significant findings. Biopsy from the mass revealed granulomas and Langhan's type multinucleated giant cells, suggesting of TB. In view of such findings, she was referred to Infectious Disease team and anti-TB medications were commenced. Colonoscopy was then performed as outpatient and revealed normal findings.

III. DISCUSSION

Tuberculosis (TB) is a common granulomatous disease caused by *Mycobacterium tuberculosis*. It has become a major health problem worldwide, especially in developing countries such as Malaysia. The reason Sabah being the most prevalent state of TB are owing to inadequate knowledge, illiteracy, unavailability of information and insufficient publicity. [1] In view of the emergence of multidrug-resistant bacilli and easy susceptibility among immunocompromised individuals, the treatment plan has turned complicated and challenging. Majority of TB cases are pulmonary in origin with extra-pulmonary involvement consisting of only 11% of all cases. [2] Infestation of TB happens in any area along the gastrointestinal tract. Anal involvement is very rare, approximately 0.7% of the cases. [3] Its prevalence might be underreported, as it can be misled as Crohn's disease or other granulomatous diseases. [4] It should be suspected in all lesions not responding to the conventional treatment. Those who are at risk to develop anal TB include HIV-infected individuals, alcoholics with unhygienic habits and individuals who are practising receptive anal intercourse. [5,6].

There are a few postulated mechanisms on how tubercle bacilli affect the perianal region. It can happen after ingestion of bacilli-filled sputum from active pulmonary foci. [3] Peristalsis occurs causing bacilli to lodge in the anal region. Anal TB also can develop after haematogenous dissemination in childhood with subsequent reactivation in the future or through lymphatic channels from an infected lymph nodes. [3] It also occurs after direct spread from the adjacent organs such as intestinal or genitourinary system. [3] Traditionally, it is postulated to happen after ingestion of *Mycobacterium bovis* found in unpasteurized milk.

In endemic regions, anal TB should be considered for those who presented with complex or complicated fistula-in-ano. It is the commonest form among six presentations of anal TB. [7] Other forms include: i) ulcer with undermined edge; ii) stricture which is short annular and firm with nodular surface; iii) multiple small mucosal ulcer as a part of miliary disease; iv) lupoid form presenting as a submucosal nodule with mucosal ulceration, v) verrucous form with smooth warty excrescences. [7] Our case presented with nodular mass and multiple superficial ulcers mimicking malignancy. Gastrointestinal TB in general can present with abdominal pain, fever, change in bowel habit, and constitutional symptoms of anorexia and weight loss, as seen in more than 50% of the cases. [8] They might deny TB contact or symptoms of pulmonary TB.

Despite the availability of various diagnostic methods, early diagnosis of anal TB remains dubious. As happened in the case reported here, it mimics a malignancy. The diagnosis can be established via bacteriological, histopathological and molecular methods. Other tests such as tuberculin skin test, chest radiography and ESR are not helpful given the fact that most of the patients with extrapulmonary TB are smear negative. Pus discharge from perianal abscess can be cultured in Lowenstein-Jensen (LJ) or BACTEC medium. Presence of *Mycobacterium tuberculosis* is diagnostic. Nevertheless, culture medium also depicts the possibility of false-negative results especially in pauci-bacillary samples. Diagnosis of anal TB depends largely on the histopathological analysis. Evidence of caseating granuloma with Langhan's giant cells is suggestive of anal TB. Interestingly, acid-fast bacilli highlighted by Ziehl-Neelsen stain is always pathognomonic even though its existence is not always available. Partially treated TB, low yield biopsy specimen and formalin-fixed tissue section render negative stain. TB-polymerase chain reaction (TB-PCR) is a reliable and rapid molecular test compared to mycobacterial cultures. [9] By performing such rapid investigation, anti-TB therapy can be initiated without delay. However, it is technology dependent, costly and not readily available in every centre. The Xpert MTB/RIF assay is the latest diagnostic platform which uses an automated, closed system to perform a real-time PCR. [10] It enables rapid diagnosis of TB with minimal technical expertise. This method has been endorsed by the WHO in December 2010 as a replacement for sputum smear microscopy. [10]

Once the diagnosis of anal TB is made, it necessitates vigorous anti-TB treatment with careful monitoring. However, perineal sepsis should be controlled concomitantly with any form of surgical interventions via incision and drainage, fistula surgery or even through a stoma creation. Anti-TB medication is the primary line of treatment. For newly-diagnosed case, the standard treatment is a minimum of 6-month regimen consisting of daily 2-month (intensive phase) of EHRZ followed by daily 4-month (maintenance phase) of HR. [11] The four drugs used are ethambutol 800 mg/day, rifampicin 450 mg/day, isoniazid 300 mg/day and pyrazinamide 1500 mg/day. [11] The introduction of fixed dosage of anti-TB drugs namely AKuriT-4, it has reduced risk of non-compliance by 17% and consequently improves effectiveness of therapy. [12]

IV. CONCLUSION

Anal TB can manifest in various presentations. Although rare, a high index of suspicion of anal TB should be considered especially in endemic region and in cases of diagnostic ambiguity especially those mimicking malignancy. Surgical intervention alone is inadequate, hence necessitating vigorous anti-TB treatment.

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