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Case Report

Tuberculosis Abscess of the Neck with Concurrent Bacterial Infection: A Case Report

Zu Kang Voon and Dayaabaran Marimuthu*

Department of Otorhinolaryngology-Head and Neck Surgery, Hospital Segamat, Segamat, Malaysia

***Corresponding Author:** Dayaabaran Marimuthu, Department of Otorhinolaryngology-Head and Neck Surgery, Hospital Segamat, Segamat, Malaysia.

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Abstract

TB neck abscess is a rare manifestation of extrapulmonary tuberculosis. Timely and accurate diagnosis is crucial to initiate appropriate treatment and prevent complications. This case report highlights the importance of considering TB as a differential diagnosis in patients presenting with neck abscess and also the various challenges to manage concurrent bacterial infection.

Keywords: Tuberculosis; Extrapulmonary; Neck Abscess; Pseudomonas; Acetic Acid

Introduction

Tuberculosis (TB) is an infectious disease caused by Mycobacterium tuberculosis, a bacterium that primarily affects the lungs but can also manifest as extrapulmonary TB [1]. TB neck abscess is a rare manifestation of extrapulmonary TB characterized by the formation of an abscess in the neck region [2]. The diagnosis of TB neck abscess can be challenging due to its nonspecific clinical presentation and the need for appropriate diagnostic methods [3,4]. Timely and accurate diagnosis is crucial to initiate appropriate treatment and prevent complications associated with delayed management [5]. This case report highlights the importance of considering TB as a differential diagnosis in patients presenting with neck abscess and also the various challenges to manage concurrent bacterial infection.

Case Report

A 30-year-old male presented with a two months' history of progressively enlarging bilateral cervical lymph node swelling. He was diagnosed with pulmonary TB with TB lymphadenitis and subsequently started on standard four-drug ATT regimen consisting of isoniazid, rifampicin, pyrazinamide, and ethambutol in intensive phase. However, the swelling over his right neck worsened with pus discharge and fever. On examination, there was a tender, fluctuant swelling measuring 6cm x 6cm in the right anterior triangle of the neck. The overlying skin was erythematous and warm to touch; there was also singular punctum with pus discharge.

Ultrasound neck was done which revealed large right lateral neck heterogenous collection likely partially liquified abscess. Patient underwent surgical drainage of the abscess, slough tissue and pus removed intraoperatively and sent for culture and sensitivity. While waiting for the cultures, patient was on daily povidone dressing but patient wound was still exudative with minimal slough. Aquacel Ag was chosen as the next appropriate dressing choice as it helps to absorb moisture and reduce exudates in additional to having antimicrobial properties. Prior to dressing, Dermacyn solution was utilized for cleaning and irrigation of the wound, this sterile and highly oxidised solution is very useful for reducing inflammation and promoting granulation.

Despite our best efforts, patient's wound still showed no significant improvement. Intraoperative pus for culture and sensitivity was reported positive for *Pseudomonas aeruginosa* which was sensitive to ceftazidime and ciprofloxacin. Ciprofloxacin was initiated for the patient along with acetic acid dressing to promote better wound healing. Acetic acid exhibits bactericidal activity against *Pseudomonas aeruginosa*. It disrupts the cell membrane integrity, leading to bacterial cell death [8]. Patient's wound finally showed signs of improvement after completion of ciprofloxacin and acetic acid dressing, and repeated wound culture was negative. Hydrocyn aqua solution along with hydrocyn aqua gel was applied on the wound which creates a moist wound environment that accelerates wound healing.

Patient responded well to the treatment and his wound gradually recovers with the use of modern dressing as mentioned. Patient's wound formed a well healed scar after 2 months post operatively and there was no recurrence during the subsequent follow up and anti-TB therapy was completed.

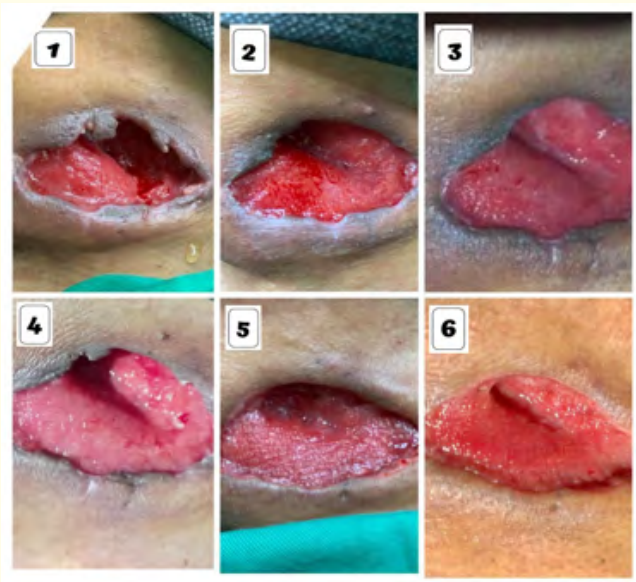

Figure 1: Patient's wound post debridement, progress after application of modern dressing.

Figure 2: Patient's wound after completion of treatment.

Discussion and Conclusion

Tubercular neck abscess is a rare manifestation of extrapulmonary TB, and concurrent bacterial co-infection adds complexity to the clinical scenario [6]. Effective management of TB neck abscess with bacterial co-infection necessitates a multidisciplinary approach. Surgical drainage of the abscess is crucial for both therapeutic and diagnostic purposes. Anti-tubercular therapy, tailored to drug sensitivity patterns, forms the cornerstone of treatment for TB [7]. Simultaneously, appropriate antibiotic therapy targeting the co-infecting bacteria is essential to combat bacterial growth and prevent complications.

Pseudomonas aeruginosa is a common pathogen associated with wound infections and is known for its ability to form biofilms, making it challenging to treat [8]. Acetic acid has been shown to effectively disrupt and disperse biofilms formed by *Pseudomonas aeruginosa*, making the bacteria more susceptible to treatment [9,10]. *Pseudomonas aeruginosa* thrives in alkaline environments. Acetic acid, with its acidic nature, helps restore the acidic pH of the wound, creating an unfavorable environment for the growth of *Pseudomonas aeruginosa*.

Furthermore, the management of wounds is a critical aspect of healthcare, and the choice of dressing plays a significant role in promoting optimal wound healing. Modern dressings have

transformed wound care by offering enhanced properties and functionalities compared to traditional dressings. These dressings provide benefits such as maintaining a moist wound environment, facilitating exudate management, offering antimicrobial properties, and improving patient comfort. The continued advancements in dressing technology hold promise for further improving wound healing outcomes and patient quality of life comprehensive understanding of this condition is crucial for healthcare professionals to optimize patient care.

Bibliography

1. Sharma S K., *et al*. "Challenges in the diagnosis and treatment of tuberculosis". *Indian Journal of Medical Research* 144.3 (2016): 271-273.

2. Singh S., *et al*. "Tuberculosis of the head and neck: An overview". *Dental Research Journal* 15.6 (2018): 381-387.

3. Khanna R and Bhatia A. "Tuberculous cervical lymphadenopathy". *Medical Journal Armed Forces India* 72 (2016): S59-S63.

4. Har-El G., *et al*. "Tuberculous abscess of the neck: a case report". *The American Journal of Otolaryngology* 14.1 (1993): 61-63.

5. Yadav S., *et al*. "Tuberculous abscess of the neck: A diagnostic dilemma". *Journal of the College of Physicians and Surgeons Pakistan* 27.8 (2017): 517-519.

6. Sharma BR., *et al*. "Tuberculous cold abscess: A rare entity revisited". *Tropical Doctor* 42.1 (2012): 51-52.

7. Prasad R., *et al*. "Cervical tuberculous lymphadenitis: Changing clinical pattern and concepts in management". *Journal of Clinical and Diagnostic Research* 9.4 (2015): PC05-PC08.v

8. Høiby N., *et al*. "Antibiotic resistance of bacterial biofilms". *International Journal of Antimicrobial Agents* 35.4 (2010): 322-332.

9. Moslemi N., *et al*. "Antibacterial activity of acetic acid against Pseudomonas aeruginosa: A brief review". *Journal of Clinical and Experimental Dentistry* 11.5 (2019): e474-e480.

10. Balcão V M., *et al*. "Acetic acid in microbiological control: Effective, eco-friendly and sustainable strategies for microbial spoilage prevention". *Food Research International* 126 (2019): 108649.