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DIPHTHERIA: A RARE CASE OF CUTANEOUS MANIFESTATION WITH TONSILLAR AND VULVO-VAGINAL INVOLVEMENT

S.A. SUWAID[1,2], A. MUSTAPHA[3], M. RIED[3], A. MUHAMMAD[4], R. MUHAMMAD[3], S. YUSUF[2], A.L. SHEHU[3], D.T. WORKU[5], P.E. EVBUOMWAN[6], Y. MBUYI[6], I.I. ADJAHO[5], F. ALE[5], H.O. JUMA[3], M. FIX[3], K. USMAN[2]

[1] Murtala Muhammed Specialist Hospital Diphtheria Treatment Centre, Kano, Nigeria, [2] Hospital management board Kano State, Kano, Nigeria, [3] Medecins sans Frontieres, West and Central Africa, Kano, Nigeria, [4] Federal University Dutse, Jigawa State, Dutse, Nigeria, [5] Medecins sans Frontieres, West and Central Africa, Abidjan, Cote D'Ivoire, [6] Medecins sans Frontieres, West and Central Africa, Abuja, Nigeria

INTRODUCTION

Cutaneous diphtheria, a rarely seen manifestation of Corynebacterium diphtheriae, presents a unique challenge in clinical practice, particularly in regions with low resources [1]. Despite its infrequency, cutaneous diphtheria has raised concerns due to its association with distinct risk factors, including poor socioeconomic status [1]. Cases of cutaneous diphtheria carry significant implications, as transmission can occur through contact with respiratory secretions, infected skin lesions, or exposure to contaminated dust and fomites [2]. Interestingly, the transmissibility of cutaneous diphtheria is suggested to exceed that of its respiratory counterpart [3]. However, comprehensive data on cutaneous diphtheria remain scarce, necessitating an in-depth exploration of its clinical dynamics, especially in the context of an ongoing outbreak. This study focuses on an intriguing subset within the diphtheria outbreak in Kano State, Northern Nigeria, where the MMSH Diphtheria Treatment Centre recorded a notable 5811 diphtheria cases between January and September 2023 (week 2 to 39 of 2023).

CASE DESCRIPTION

The 17-year-old female patient presented with fever, difficulty swallowing and a history of recent sibling death due to diphtheria. Clinical examination confirmed the presence of a throat pseudomembrane and grade 3 tonsillar enlargement. The patient received treatment with 60,000 IU of diphtheria antitoxin (DAT) slowly over 4 hours, IV dexamethasone 24mg STAT followed by 4mg/6hr for 3 days, IV paracetamol (PCM) 1g 8hrly for 4 days, PO azithromycin 500mg daily for 14 days. She was also advised to gargle with warm saline solution 3-4 times daily and given other supportive care.

Four days into the admission, the patient developed vulval swelling and reported pain. Clinical examination revealed an oedematous vulva with a greyish-white patch extending into the vaginal introitus (Fig. 1A). Positive culture and histocytology results confirmed diphtheria involvement in the vulval and vaginal regions.

To address the vulval diphtheria, the patient underwent a new therapy with sitz baths using a 1:10 dilution of 6% hydrogen peroxide twice daily. Positive improvement was noted (Fig. 1B), with complete clearance of the pseudomembrane observed by the fourth day of sitz bath therapy. The swelling (as noted in Figures 1A through 1C) as well as the pain also resolved.

A

Figure 1A: Greyish-white patch on day 4 of admission

B

Figure 1B: After 3 days of sitz bath with hydrogen peroxide

C

Figure 1C: After 8 days of management in DTC

The patient was discharged after an 8-day hospital stay with all symptoms resolved (Fig. 1C). A follow-up visit two weeks later confirmed sustained improvement, with no recurrence of symptoms. Additionally, the patient received the diphtheria vaccine at the second follow-up three weeks post-admission.

DISCUSSION

The presented case adds to the understanding of cutaneous diphtheria, a manifestation typically associated with toxigenic or non-toxigenic strains of C. diphtheriae. Cutaneous diphtheria is generally considered a milder form of the disease, leading to cutaneous sores or shallow ulcers. It is noteworthy that toxic complications in cutaneous disease are rare. The case characterised the simultaneous presence of pseudomembranes in both the throat and vaginal regions. While it remains unclear whether these presentations were attributable to the same strain of C. diphtheriae or distinct strains, the co-occurrence of these manifestations raises intriguing questions about the mode of transmission and pathophysiology involved.

ETHICS STATEMENT

The study respected the patient's autonomy and privacy, and no identifying data or images were included. Patient approval via written consent for the publication of her clinical data and pictures was acquired according to international ethics standard. Written inform consent was obtained from the patient's guardian for publication of this case report and accompanying images. The ethical clearance for this study was obtained from hospital management board under the administration of Kano state, ministry of health. This poster was also approved for submission by the MSF WACA Medical Director.

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