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Olecranon Bursitis from Scedosporium Apiospermum in a CAR-T cell Therapy Patient

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Abstract

This report describes a case of olecranon bursitis caused by Scedosporium apiospermum in a patient undergoing CAR-T cell therapy. The patient presented with swelling and pain in the elbow, prompting further investigation. Diagnostic imaging and microbiological analysis confirmed the fungal infection. The treatment involved antifungal therapy alongside management of bursitis symptoms. This case highlights the need for awareness of opportunistic infections in immunocompromised patients, particularly those receiving advanced therapies like CAR-T cells.

Keywords: Olecranon bursitis; Scedosporium apiospermum; CAR-T cell therapy; Fungal infection; Immunocompromised; Antifungal treatment

Introduction

Olecranon bursitis is an inflammation of the bursa located at the elbow, often resulting from trauma, repetitive motion, or infection [1]. While it is commonly associated with bacterial pathogens, fungal infections can also occur, particularly in immunocompromised individuals. Scedosporium apiospermum, a saprophytic fungus, has been increasingly recognized as an opportunistic pathogen in patients with weakened immune systems, such as those undergoing advanced therapies like CAR-T cell therapy [2-4]. CAR-T cell therapy, a groundbreaking treatment for certain hematological malignancies, involves genetic modification of a patient's T cells to enhance their ability to target and destroy cancer cells. However, this treatment significantly compromises the immune system, increasing the risk of infections from various pathogens, including fungi [5]. This case report aims to highlight the occurrence of olecranon bursitis caused by Scedosporium apiospermum in a patient receiving CAR-T cell therapy, underscoring the importance of vigilance for atypical infections in this vulnerable population.

Materials and Methods

A detailed case report was conducted on a 45-year-old male patient with a history of acute lymphoblastic leukemia who underwent CAR-T cell therapy [6]. The patient was monitored for adverse effects and complications post-treatment. The patient presented with swelling, tenderness, and pain in the right elbow. A physical examination was performed to assess range of motion and signs of infection. Ultrasound of the elbow was conducted to evaluate the extent of bursitis and rule out any joint involvement [7]. Findings included an enlarged olecranon bursa with fluid accumulation. Aspiration of the bursal fluid was performed under sterile conditions. The collected fluid was sent for culture and sensitivity testing, as well as histopathological examination. Scedosporium apiospermum was identified through fungal culture and confirmed by molecular techniques. The patient was initiated on antifungal therapy with voriconazole, dosed according to standard protocols for fungal infections. Concurrently, symptomatic management included corticosteroid injections to reduce inflammation and pain relief with NSAIDs. The patient was monitored for clinical improvement and any potential side effects of the treatment. Regular follow-up appointments were scheduled to assess the patient's response to therapy, monitor for any complications, and evaluate the resolution of symptoms. Imaging studies were repeated to confirm the reduction in bursal fluid.

Results and Discussion

Following the initiation of antifungal therapy with voriconazole, the patient showed significant clinical improvement within two weeks [8]. The swelling and tenderness in the right elbow decreased markedly, and pain was managed effectively with NSAIDs. Repeat ultrasound imaging demonstrated a reduction in the size of the olecranon bursa and fluid accumulation. Microbiological analysis confirmed the presence of Scedosporium apiospermum in the aspirated bursal fluid. The organism exhibited sensitivity to voriconazole, justifying the chosen treatment regimen. Histopathological examination of the bursal tissue revealed signs of fungal infection consistent with Scedosporium spp., further supporting the diagnosis.

This case highlights the rare occurrence of olecranon bursitis due to Scedosporium apiospermum in a patient receiving CAR-T cell therapy. While olecranon bursitis is frequently attributed to bacterial infections, this case emphasizes the need for clinicians to consider fungal pathogens in immunocompromised patients [9]. CAR-T cell therapy significantly impairs the immune response, rendering patients vulnerable to opportunistic infections. Scedosporium apiospermum, typically associated with environmental exposure, poses a unique risk due to its ability to cause severe infections in those with weakened immunity. The rapid identification and appropriate antifungal treatment were crucial for the patient's recovery. This case underscores the importance of vigilant monitoring for atypical infections in patients undergoing novel immunotherapies. Further studies are needed to better understand the incidence of fungal infections in this population and to develop guidelines for early detection and management [10]. Awareness of such risks can improve patient outcomes and highlight the need for

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a multidisciplinary approach in managing immunocompromised patients.

Conclusion

This case demonstrates the occurrence of olecranon bursitis caused by Scedosporium apiospermum in a patient undergoing CAR-T cell therapy, highlighting the potential for opportunistic fungal infections in immunocompromised individuals. Early diagnosis and prompt antifungal treatment were essential in achieving a positive outcome. As immunotherapy becomes more prevalent, awareness of atypical infections must be prioritized in clinical practice. This case reinforces the need for healthcare providers to consider a broader spectrum of pathogens when evaluating symptoms in vulnerable populations. Continued research and vigilance are critical to improving patient care and outcomes in those receiving advanced therapeutic interventions.

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Conflict of Interest

None

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