

Oncology

Management of Hepatic Granulomatous Tuberculosis After BCG Therapy for Bladder Cancer



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ABSTRACT

BCG therapy is used as a treatment in bladder cancer. Intravesical administration of *Bacillus Calmette-Guérin* is used as a treatment method in superficial bladder cancer. While it is commonly effective, some serious side effects may occur. We hereby report a 65-year-old man who developed granulomatous hepatitis as a complication following BCG therapy. He was treated successfully with antitubercular therapy and prednisolone.

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Introduction

Bacillus Calmette-Guérin (BCG) is a viable attenuated strain of *Mycobacterium bovis* that is widely used as an effective non-specific immunotherapy in the treatment of high-risk superficial bladder carcinoma.¹ Bladder instillation is often accompanied by local and systemic side effects. One of the rare systematic side effects is hepatitis which is serious. We report on a patient with a granulomatous hepatitis as a side effect of BCG therapy.

Case presentation

A 65 year-old male patient was treated for bladder cancer. He underwent trans-urethral resections (TUR) of high-grade T1 bladder tumor. He was planned to receive BCG therapy for 6 weeks. Despite this management, the patient admitted with fever and jaundice after the second BCG instillation. Para clinical examinations showed elevated liver enzymes (aspartate aminotransferase 300 IU/L, alanine aminotransferase 180 IU/L, alkaline phosphatase 1100 IU/L). The pathology showed hepatic granulomatosis and acid fast bacilli (AFB) (Figs. 1, 2). Because of liver failure, treatment with second line antituberculosis drugs was started, with ethambutol and it was complemented with prednisolone and parenteral

levofloxacin. The patient went into remission and liver enzymes became normal within 1 week (aspartate aminotransferase 40 IU/L, alanine aminotransferase 35 IU/L, alkaline phosphatase 95 IU/L). The patient was discharged on standard tuberculosis treatment (i.e., isoniazid, rifampin and ethambutol) and steroid treatment was discontinued.

Discussion

For decades, BCG therapy remains as an effective treatment for bladder cancer.² BCG successfully eradicates carcinoma and decreases the probability of tumor recurrence after TUR.³ Despite promising results of BCG therapy, due to the presence of viable

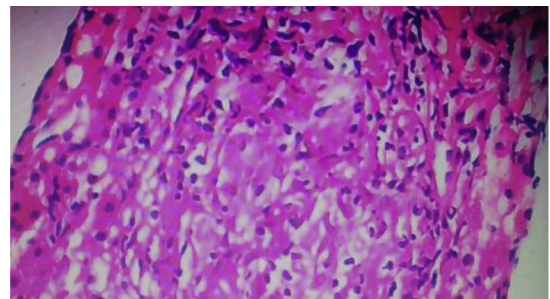


Figure 1. Pathological features of liver biopsy of granulomatous hepatitis.

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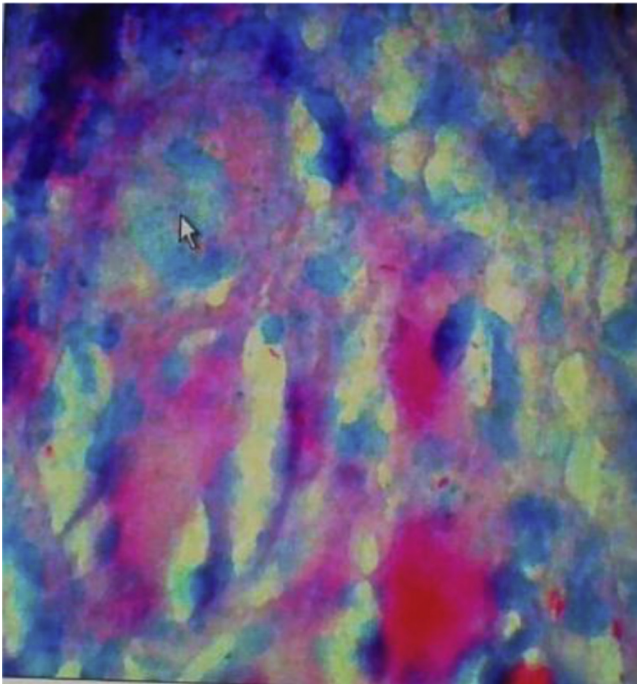


Figure 2. Acid fast stain of the liver biopsy which is positive for AFBs.

attenuated mycobacteria the potential for severe side effects exists. Estimated rate of severe complications related to BCG therapy is 0.35%–1.9%, the most (70%–75%) of those being systemic. Hepatic granulomatous tuberculosis associated with BCG therapy is a rare but fatal complication after BCG instillation. While the best differential diagnosis is hepatitis biopsy, diagnosis may be made empirically or through detection of acid-fast bacilli in patient's serum. Initial treatment is essential and as many as 5 antimicrobial agents

including isoniazid, rifampin, ethambutol, ciprofloxacin and pyrazinamide must be utilized.⁴

We report hepatic granulomatous tuberculosis after bladder BCG instillations for bladder cancer which was managed by using the second-line antituberculous agents along with prednisolone and parenteral levofloxacin.

Conclusion

BCG remains the most common treatment for bladder cancer. Complications after BCG therapy can occur. Therefore an appropriate and prompt decision for treatment may be beneficial in managing these complications. The classic treatment of this disease is the first-line antituberculosis drugs, but in the case of liver failure, a second-line TB treatment with steroids and levofloxacin could be used as the treatment. In this case the treatment was successfully done and the patient was rescued from certain death.

Conflict of interest

All authors confirm that there are no financial and personal relationships with other people or organizations that could inappropriately influence (bias) this study.

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