A rare BCG scar local skin inflammation following intravesical BCG immunotherapy for bladder cancer

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The Bacillus Calmette-Guérin (BCG) vaccine against tuberculosis has been widely applied in the treatment of bladder cancer. Since its first use in 1976, thousands of patients have been treated with BCG intravesical immunotherapy, which evidence suggests is the most effective and clinically safe therapy for preventing bladder tumour recurrence. However, this immunotherapy can cause several local and systemic adverse events.

We report a rare adverse reaction that has implications concerning anti-mycobacterial immunity. A previously healthy 78-year-old male developed an inflammatory reaction at his childhood BCG inoculation site within 30 days of the first intravesical BCG instillation for bladder cancer. The BCG inoculation site became progressively red and swollen, followed by a clear, serous fluid secretion. This local dermatological reaction fluctuated throughout the course of treatment but resolved spontaneously without medical intervention. The bladder cancer was cured, without recurrence during 10-years follow-up.

We discuss the mechanism of BCG immunotherapy leading to systemic complications and hypothesise the contributing pathophysiology of this adverse event. The implications of prior immunity to BCG and Mycobacterium tuberculosis for bladder cancer immunotherapy are also explored.

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