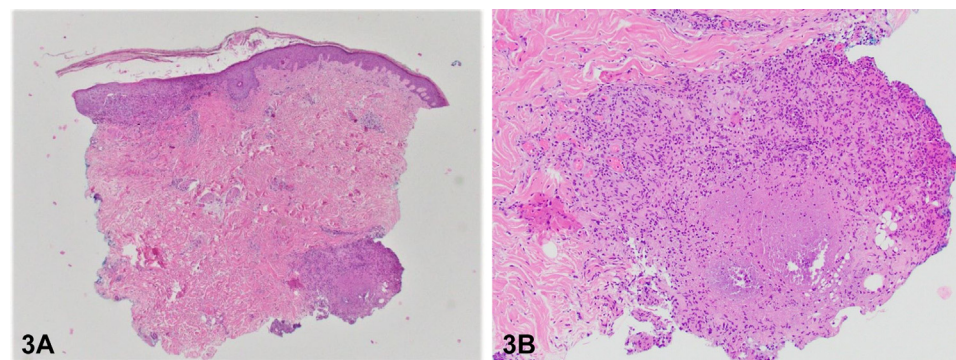
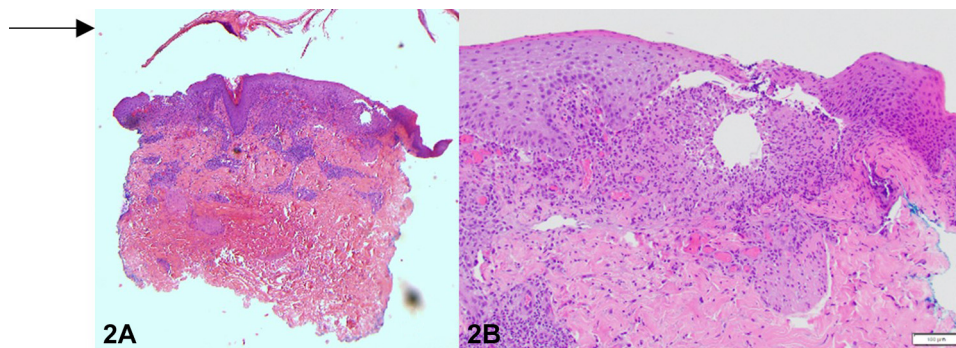


# Discrete red-brown crusted papules with a bladder cancer history



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**Key words:** bladder cancer; cutaneous manifestations; disseminated BCG; intravesical BCG therapy.



**CLINICAL HISTORY**

An 80-year-old male underwent transurethral resection of a bladder tumor and 6 intravesical bacillus calmette guerin (BCG) treatments for stage T1 high-grade bladder cancer. One year later, he presented with a 2-month rash consisting of numerous, discrete, red-brown crusted papules on his left abdomen, left lower extremity, and left buttock (Fig 1) with fatigue, generalized weakness, and neutropenia. Two punch biopsies revealed a papillary dermal neutrophilic and histiocytic infiltrate with deep necrotizing granulomas. Acid fast bacilli (AFB), Brown and Brenn, and Grocott-Gomori's (or Gömöri) methenamine silver stain (GMS) stains were negative (Figs 2 and 3). Tissue culture, polymerase chain reaction (PCR), and T-SPOT were negative for mycobacterium. Bone marrow biopsy revealed multifocal non-necrotizing granulomas.

**Question 1: What is the most likely diagnosis?**

- A. Herpes zoster
- B. Disseminated BCG
- C. Prurigo nodularis
- D. Sarcoidosis
- E. Granuloma annulare

**Answers:**

**A.** Herpes zoster — Incorrect. Herpes zoster typically presents as acantholysis with viral cytopathic changes including multinucleated keratinocytes, chromatin margination, and nuclear molding. Granulomatous isotopic responses following herpes zoster can occur, but this patient did not have a history of zoster nor an eruption in a dermatomal distribution.

**B.** Disseminated BCG — Correct. Disseminated BCG can present as a granulomatous dermatitis with necrotizing granulomas. Despite the negative AFB stain, tissue culture, and PCR, this is supported as the most likely diagnosis by the presence of granulomas within the skin and bone marrow, along with the clinical-pathological correlation. A recent study showed that microbiologic studies, including acid-fast bacilli stain, culture, and PCR assay, were positive in only 48% of cases, while tissue biopsy showing granulomatous inflammation was positive in 86.3% of cases.<sup>1</sup>

**C.** Prurigo nodularis — Incorrect. Prurigo nodularis clinically presents as keratotic papules, and

histopathology shows irregular acanthosis, hyperkeratosis, hypergranulosis, and papillary dermal fibrosis.

**D.** Sarcoidosis — Incorrect. Sarcoid presents as naked granulomas with no caseous necrosis.

**E.** Granuloma annulare — Incorrect. Granuloma annulare presents as either interstitial or palisaded histiocytes with increased mucin. Clinically, granuloma annulare most often presents as annular smooth reddish papules.

**Question 2: Reported complications of intravesical BCG treatment include all of the following except**

- A. Cystitis
- B. Penile lesions
- C. BCG sepsis
- D. Prostatitis
- E. Mycosis fungoides

**Answers:**

**A.** Cystitis — Incorrect. This is one of the most common complications following intravesical BCG treatment.<sup>2</sup>

**B.** Penile lesions — Incorrect. Penile lesions, including papules, nodules, or ulcers, have been reported.<sup>2,3</sup>

**C.** BCG sepsis — Incorrect. BCG sepsis has been reported with an approximate incidence of 1 in 15,000 patients. It presents with fever, chills, and hypotension with potential for multiorgan failure.<sup>2</sup>

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**D.** Prostatitis — Incorrect. Granulomatous prostatitis is a common complication, although it can be asymptomatic.<sup>2</sup>

**E.** Mycosis fungoides — Correct. Mycosis fungoides has not been reported as a complication of BCG treatment.<sup>2</sup>

**Question 3: What is the initial treatment of disseminated BCG?**

- A.** Amphotericin
- B.** Rifampin, isoniazid, and ethambutol
- C.** Azithromycin
- D.** Minocycline
- E.** Radiation

**Answers:**

**A.** Amphotericin — Incorrect. Amphotericin is indicated in fungal infections and not mycobacterial infections.

**B.** Rifampin, isoniazid, and ethambutol — Correct. Disseminated BCG is a complication arising from vaccination with *Mycobacterium bovis*, thereby requiring antituberculosis medications.<sup>4</sup>

**C.** Azithromycin — Incorrect. Azithromycin does not treat mycobacterial infections.

**D.** Minocycline — Incorrect. Minocycline does not treat mycobacterial infections.

**E.** Radiation — Incorrect. Radiation is not indicated for mycobacterial infections.

**Abbreviations used:**

PCR: polymerase chain reaction

AFB: acid fast bacilli

BCG: bacillus calmette guerin

GMS: Grocott-Gomori's (or Gömöri) methenamine silver stain

**Conflicts of interest**

None disclosed.

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