

LETTER TO THE EDITOR

Pityriasis Rosea-Like Rash Secondary to Intravesical Bacillus Calmette-Guerin Immunotherapy

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Dear sir:

A 40-year old woman was referred for consultation for skin eruption on her entire body of two month duration. Four years ago, her diagnostic cystoscopic examination revealed transitional cell carcinoma of the bladder. The patient received three cycles of Bacillus Calmette-Guerin (BCG) vaccination for bladder cancer and noted the skin eruption after the 2nd cycle of BCG treatment. She has not taken any other drugs associated with pityriasis rosea-like rash. The patient experienced no adverse effect during the initial treatment with intravesical BCG in 6 week cycles in 2005. During the 2nd treatment with BCG in 3 week cycles in February, 2006, the patient experienced a mild pruritic erythematous maculopapular eruption with a central collarette of scale beginning on the lower legs, subsequently spreading to the trunk, face, neck, arms and back (Fig. 1). The eruption was widespread, but palms and soles were not involved. Skin biopsy was performed on the skin lesion on her trunk. The histopathological findings showed acanthosis, spongiosis, exocytosis in the epidermis and superficial perivascular inflammatory cell infiltration and extravasated red blood cells in the upper dermis (Fig. 2A). The patient was treated with desonide cream (Desowen[®], Galderma Pharma SA, Lausanne, Switzerland) for her pruritus, and the skin lesions resolved

after BCG therapy was discontinued. Her treatment with BCG for a 3rd cycle was restarted in June, 2006. She has experienced a 2nd flare-up that was less than before. Routine laboratory examinations were all within normal range excepting slightly increased serum aspartate transferase (53 IU/L, NL: 0~40 IU/L), alanine transferase (69 IU/L, NL: 0~41 IU/L). Since skin lesions were expected to resolve with conservative therapy as in the 1st flare, the BCG treatment was not discontinued and finished as scheduled.

In 1984, Morales¹ reported that immunotherapy with BCG, a live attenuated strain of the cow tuberculosis bacillus, *Mycobacterium bovis*, is effective for patients with superficial bladder cancer and carcinoma in situ. The method of BCG immunotherapy in bladder cancer is repeated intravesical administration BCG vaccine of several cycles (120 mg Pasteur attenuated strain weekly for 6 weeks). In this way, larger doses of organisms may be injected directly into the tumor masses. Moreover, the tumor mass is highly vascular, so delivery of BCG into the circulation may result in BCG bacteremia. Inflammation secondary to BCG vaccination results in intravesical necrosis and sloughing of tumor cells². Adverse events of intravesical BCG therapy include systemic and local reactions. BCG therapy induces granulomatous inflammatory reactions within lymph node, liver, lung. Systemic adverse effects include fever (>40°C), nausea, chilling, malaise, pneumonia, hepatitis, sepsis, urethral obstruction, renal abscess, cystitis, malaise, influenza like symptoms, granulomatous hepatitis². Various cutaneous adverse events attributed to BCG vaccination have often been reported including skin abscess secondary to percutaneous injection of BCG with local inoculation granuloma, erythema nodosum, purpura from pancytopenia, cellulitis at the vaccination site³. In contrast to these manifestations, pityriasis rosea-like eruptions seen in our case has been rare and only three cases

Received March 11, 2011, Revised August 29, 2011, Accepted for publication August 30, 2011

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Fig. 1. (A) Erythematous oval macules and papules with central collarette of scales appearing shortly after the patients 2nd treatment with Bacillus Calmette-Guerin (BCG) on the trunk and (B) back. (C) A closer view of the abdominal lesion shows erythematous macules with a central collarette of scales.

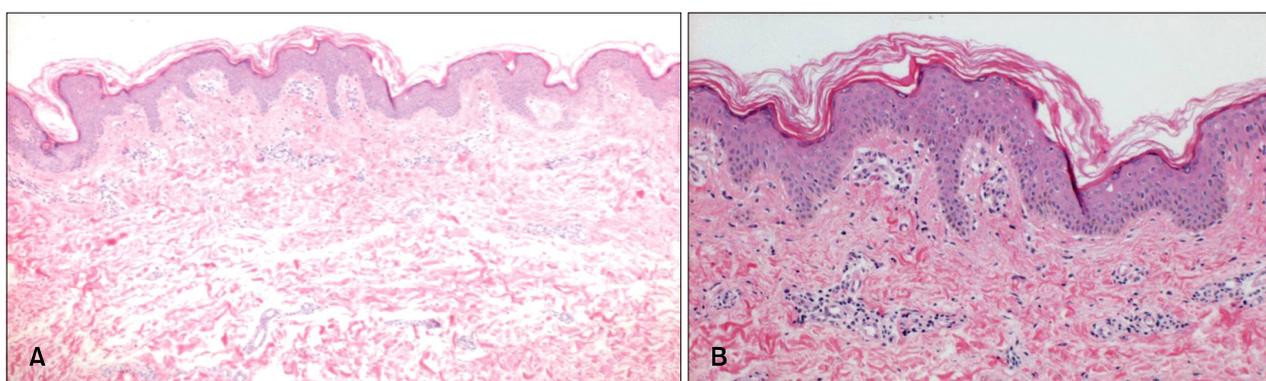


Fig. 2. (A) Biopsy specimen of the lesion shows focal parakeratosis, acanthosis in the epidermis and superficial perivascular inflammatory cell infiltration in the upper dermis (H&E, $\times 40$). (B) In high power view, the specimen shows focal parakeratosis, spongiosis, exocytosis, superficial perivascular inflammation and extravasated red blood cells (H&E, $\times 100$).

have been reported^{4,5}. Many drugs have been reported to result in a pityriasis rosea-like rash: barbiturates, bismuth, captopril, gold, metronidazole, isotretinoin, levamisole, arsenicals, diphtheroid toxoid, smallpox vaccination⁶. When associated with drugs, the eruption may present atypical manifestations which include smaller number of larger scaly lesions that do not have the classic “Christmas tree” distribution⁶ and may have bullous or purpuric lesions. The lesions may also be refractory to therapy resulting in a protracted course and evolution into lichenoid dermatitis. BCG therapy has been only rarely reported associated with pityriasis rosea-like rash. Honl et al.⁴ reported a case of pityriasis rosea-like rash secondary to BCG therapy in a 60-old-man patient with recurrent bladder cancer. The patient presented with erythematous macules with central collarettes of scale on face, trunk, and arms appearing shortly after the first treatment. Histologically, spongiotic dermatitis with parakeratosis, superficial perivascular chronic inflammation, and extravasated red blood cell

were observed. The BCG was discontinued and mitomycin C was substituted as treatment, followed by rapid resolution of the skin lesions. Kaplan et al.⁵ also reported a case of pityriasis rosea-like rash in a 12-year-old boy several days after BCG vaccination in 1989. In our case, pityriasis rosea-like drug eruption had some similarities with typical pityriasis rosea which had a herald patch, and presented erythematous maculopapular eruptions with a central collarette of scale, located on the trunk area though it did not have the classic “Christmas tree” distribution. The lesions were not purpuric or bullous, not refractory, and did not evolve into lichenoid dermatitis. Differing from a case reported by Honl et al.⁴, the reaction shown in our patient has been successfully treated without interrupting the cancer therapy although the treatment was delayed for 3 months due to this drug eruption. For fear of making the drug eruption worsen, the physician would discontinue BCG and start other anticancer drugs. However, as in our case, a pityriasis rosea-like eruption can resolve with

conservative therapy without interrupting cancer therapy. Physicians should be aware that intravesical BCG therapy for bladder cancer could induce a pityriasis rosea-like eruption that resolves without discontinuing BCG therapy.

ACKNOWLEDGMENT

This paper received a Best Poster Award in Korean Dermatological Association- the 60th Spring Meeting.

REFERENCES

1. Morales A. Long-term results and complications of intracavitary bacillus Calmette-Guérin therapy for bladder cancer. *J Urol* 1984;132:457-459.
2. Porena M, Del Zingaro M, Lazzeri M, Mearini L, Gianantoni A, Bini V, et al. Bacillus Calmette-Guérin versus gemcitabine for intravesical therapy in high-risk superficial bladder cancer: a randomised prospective study. *Urol Int* 2010;84:23-27.
3. Aungst CW, Sokal JE, Jager BV. Complications of BCG vaccination in neoplastic disease. *Ann Intern Med* 1975;82:666-669.
4. Honl BA, Keeling JH, Lewis CW, Thompson IM. A pityriasis rosea-like eruption secondary to bacillus Calmette-Guérin therapy for bladder cancer. *Cutis* 1996;57:447-450.
5. Kaplan B, Grunwald MH, Halevy S. Pityriasis rosea-like eruption associated with BCG vaccination. *Isr J Med Sci* 1989;25:570-572.
6. Parsons JM. Pityriasis rosea update: 1986. *J Am Acad Dermatol* 1986;15:159-167.