Treatment Case of Asymptomatic Prostate Tuberculosis That Developed After Bacillus Calmette-Guerin Intravesical Therapy in a Patient With Nonmuscle Invasive Bladder Cancer

Jong Won Kim¹, Suk Young Lee¹, Yee Jeong Kim², Sang Hee Choi³

Departments of ¹Urology and ²Pathology, National Health Insurance Service Ilsan Hospital, Goyang,
³Department of Radiology in Trauma Center, Ajou University School of Medicine, Suwon, Korea

Intravesical Bacillus Calmette-Guerin (BCG) therapy after transurethral resection of bladder tumor is considered the most effective treatment for prophylaxis against the recurrence of high risk nonmuscle invasive bladder cancer, and generally well tolerated and infectious complication are rare. We reported a case of granulomatous prostatitis is a patient who had undergone intravesical BCG therapy due to nonmuscle invasive bladder cancer. This patient was diagnosed by prostate biopsy because of prostate-specific antigen elevation without any other voiding symptoms and abnormal abscess pocket in transrectal ultrasonography. (*Korean J Urol Oncol* 2017;15:85-87)

Key Words: Prostate tuberculosis • Bacillus Calmette-Guerin • Bladder cancer

INTRODUCTION

Bacillus Calmette-Guerin (BCG) intravesical instillation therapy, which is commonly performed as adjuvant chemotherapy following transurethral resection of bladder tumor (TURB), is the golden standard treatment for patients with high grade non-muscle invasive bladder cancer (Ta & T1).¹ This therapy is generally safe but may rarely be complicated by granulomatous prostatitis.² However, the patient in this case report showed no signs of recurrent cancer, and was diagnosed with active prostate tuberculosis in a biopsy performed after observing prostate-specific antigen (PSA) elevation not accompanied by voiding or systemic symptoms. The biopsy was performed 5 years

after the patient underwent BCG intravesical therapy. Here, we report the treatment of this patient.

CASE REPORT

A 59-year-old male patient who had no previous history of tuberculosis visited our clinic for abrupt onset gross hematuria in 2008. Cystoscopy performed at that time showed a diffuse papillary mass on the posterior wall. Accordingly, TURB was performed, and the mass was completely removed without any remnant mass. Based on pathology results, the patient was diagnosed with high grade transitional cell carcinoma (T1) of bladder, and accordingly, intravesical BCG (OncoTice, Organon Teknika, Boxtel, The Netherlands) instillation were performed once a week for 6 weeks at a concentration of 12.5 mg in 60-mL saline. Thereafter, the patient underwent cystoscopy regularly in outpatient clinics, and underwent three booster BCG intravesical therapy sessions in 2009, but showed no signs of recurrent cancer. Although no voiding symptoms were ob-

Received July 7, 2017, Revised August 14, 2017,

Accepted August 16, 2017

Corresponding Author: Suk Young Lee

Department of Urology, National Health Insurance Service Ilsan Hospital, 100 Ilsan-ro, Ilsandong-gu, Goyang 10444, Korea

E-mail: uroyoung@nhimc.or.kr

Tel: +82-31-900-0297, Fax: +82-31-900-0343

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

2017 © Copyright The Korean Urological Oncology Society and The Korean Prostate Society. All Rights Reserved.

served, PSA levels that were coincidentally measured were high. When the patient visited our clinic in 2015, a PSA level of 3.08 ng/mL was found, higher than that measured in 2008 of 0.76 ng/mL, and was later elevated to 4.07 ng/mL. However, the patient had no voiding symptoms or subjective symptoms such as perineal discomfort, and no abnormal findings were made in transrectal prostate ultrasonography with regard to prostate volume, which was 27 g, and abscess pocket (Fig. 1). Because the patient's PSA level continued to elevate, the patient was suspected to have prostate cancer, and accordingly, an ultrasonography-guided 12-core prostate biopsy was performed in 2016. The patient was diagnosed with chronic granulomatous prostatitis with caseation necrosis based on pathology results (Figs. 2, 3). The patient has been on antituberculosis medications since a Ziehl-Neelsen stain revealed a positive

Fig. 1. Transrectal ultrasonographic finding.

Fig. 2. Caseous necrosis in needle biopsy (H&E, $\times 100$).

acid-fast bacilli. He is scheduled for a follow-up prostate biopsy at the end of the 6-month pharmacotherapy of isoniazid (300 mg), rifampicin (600 mg), etambutol (800 mg), and pyrazinamide (1,500 mg) daily. And the PSA level fell to 1.48 ng/mL at the same time.

DISCUSSION

Intravesical BCG is an effective treatment option for management of recurrent nonmuscle invasive bladder cancer and carcinoma *in situ*. Intravesical BCG has been an commonly used treatment for nonmuscle invasive bladder cancer since 1976.¹ Most complications are minor, but also associated with toxic side effects including fulminant sepsis. Local complications of BCG intravesical therapy are more common, and include cystitis, hematuria, and granulomatous prostatitis. The rate of symptomatic prostatitis that develop after BCG intravesical therapy is around 0.9%,³ less of asymptomatic prostatitis and cases have been reported in which granulomatous prostatitis did not develop as a complication after BCG intravesical therapy.⁴ While it has been reported that asymptomatic granulomatous prostatitis does not require treatment even if the patient is acid-fast bacilli positive,⁵ patients with continuous asymptomatic PSA elevation must be assessed for prostate cancer through a prostate biopsy. To our knowledge, there has not been a case in which a patient began treatment for prostate cancer that was diagnosed in a biopsy performed after observation of PSA elevation more than 6 years after undergoing BCG intravesical instillation therapy. Therefore, when a patient shows

Fig. 3. Multiple granulomas and chronic inflammation (H&E, $\times 200$).

asymptomatic PSA elevation without any systemic symptoms or pain, as was the case in this case report, a prostate biopsy must be performed immediately for diagnosis and treatment of the patient. Thus, progression to systemic diseases can be prevented.

CONFLICT OF INTEREST

The authors claim no conflicts of interest.

REFERENCES

1. Morales A, Eiding D, Bruce AW. Intracavitary Bacillus Calmette-Guerin in the treatment of superficial bladder tumors. J Urol 1976;116:180-3
2. Oates RD, Stilmant MM, Freedlund MC, Siroky MB. Granulomatous prostatitis following bacillus Calmette-Guerin immunotherapy of bladder cancer. J Urol 1988;140:751-4
3. Lamm DL, van der Meijden PM, Morales A, Brosman SA, Catalona WJ, Herr HW, et al. Incidence and treatment of complications of bacillus Calmette-Guerin intravesical therapy in superficial bladder cancer. J Urol 1992;147:596-600
4. Steg A, Adjiman S, Debré B. BCG therapy in superficial bladder tumours: complications and precautions. Eur Urol 1992;21 Suppl 2:35-40
5. LaFontaine PD, Middleman BR, Graham SD Jr, Sanders WH. Incidence of granulomatous prostatitis and acid-fast bacilli after intravesical BCG therapy. Urology 1997;49:363-6