

# *Mycobacterium bovis* Associated Aneurysm of the Common Iliac Artery After Bacillus Calmette-Guérin Intravesical Treatment for Urothelial Carcinoma

© Davide Voci<sup>1</sup>, © Nils Kucher<sup>1</sup>, © Alexander Zimmermann<sup>2</sup>, © Stefano Barco<sup>1</sup>

<sup>1</sup>Clinic of Angiology, University Hospital Zurich, Zurich, Switzerland

<sup>2</sup>Department of Vascular Surgery, University Hospital Zurich, Zurich, Switzerland

**Keywords:** Mycobacteria, immunotherapy, *Mycobacterium bovis*, aneurysm, Bacillus Calmette-Guérin therapy

## Introduction

A 54-year-old man with a non-invasive urothelial carcinoma (T1N0M0) was scheduled for transurethral resection after a 2-year treatment with adjuvant Bacillus Calmette-Guérin (BCG) instillation therapy. During this period, the patient received antibiotic therapy (Rifampicin, Isoniazid, Ethambutol) for a suspected *Mycobacterium bovis* systemic infection with B symptoms and lymphadenopathy. A culture of *Mycobacterium bovis* BCG grew from the sputum of the patient. The preoperative computed tomography (CT) showed an aneurysm of the left common iliac artery with a diameter of approximately 3.5 cm (Figure 1) and a dissection of the right common iliac artery (Figure 2). These findings had not been documented in a previous CT scan done 8 months before. The clinical and imaging findings were consistent with those of a BCG-associated mycotic aneurysm. A xenopericardial graft replacement via midline laparotomy was performed two days after diagnosis without complications. A Ziehl-Neelson staining procedure and a polymerase chain reaction (IS6110 and M65 methods) were performed on an intraoperative tissue sample and confirmed the diagnosis. The patient could be discharged home a few days after the procedure with the same established preoperative antibiotic therapy. After consultation with the infectiologists in the domo, the patient was recommended to continue the antibiotic therapy for another 4 months.

Intravesical instillation of BCG is widely used for treating superficial, early-stage bladder cancer based on its

immunomodulatory effects aimed at limiting cancer progression and preventing local recurrence (1). Although being considered safe, a few typical complications may occur, such as granulomatous hepatitis or pneumonia (0.5%), hematuria (1%),



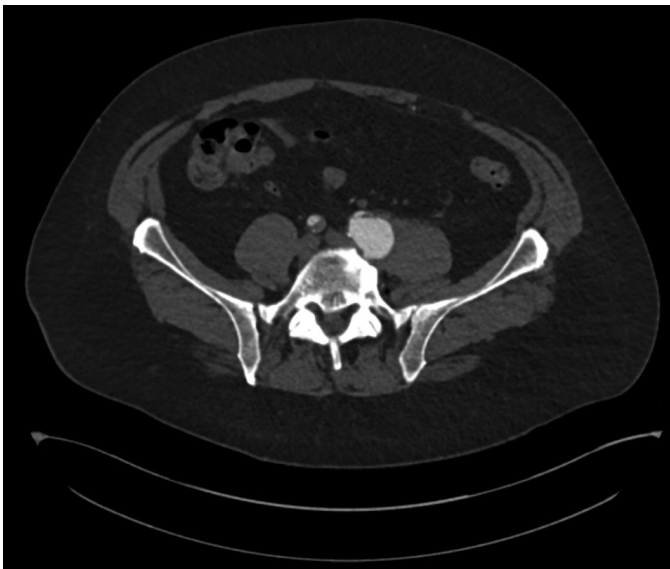
**Figure 1.** Shows a *mycobacterium bovis* associated aneurysm of the common iliac artery

**Correspondence:** Stefano Barco MD, Clinic of Angiology, University Hospital Zurich, Zurich, Switzerland  
**Phone:** +41 (0) 432531150 **E-mail:** stefano.barco@usz.ch **ORCID-ID:** orcid.org/0000-0002-2618-347X  
**Received:** 03.11.2021 **Accepted:** 27.02.2022

**Cite this article as:** Voci D, Kucher N, Zimmermann A, Barco S. *Mycobacterium bovis* Associated Aneurysm of the Common Iliac Artery After Bacillus Calmette-Guérin Intravesical Treatment for Urothelial Carcinoma. J Urol Surg, 2022;9(4):300-301.

©Copyright 2022 by the Association of Urological Surgery / Journal of Urological Surgery published by Galenos Publishing House.





**Figure 2.** Shows a dissection of the right common iliac artery

fever (2.9%) and, even more common, dysuria and pollachiuria. A very rare complication, described in fewer than 50 cases in the literature, consists of *Mycobacterium bovis*-associated aortitis with subsequent mycotic aneurysm [Higashi et al. (2)]. The localization in peripheral arteries, such as the carotid and the lower-limb arteries, appears even rarer.

Written informed consent for publication was obtained from the patient.

## Ethics

**Informed Consent:** Written informed consent for publication was obtained from the patient.

**Peer-review:** Externally and internally peer-reviewed.

## Authorship Contributions

Surgical and Medical Practices: D.V., N.K., A.Z., S.B., Concept: D.V., N.K., A.Z., S.B., Design: D.V., N.K., A.Z., S.B., Data Collection or Processing: D.V., N.K., A.Z., S.B., Analysis or Interpretation: D.V., N.K., A.Z., S.B., Literature Search: D.V., N.K., A.Z., S.B., Writing: D.V., N.K., A.Z., S.B.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study received no financial support.

## References

1. Prescott S, Jackson AM, Hawcard SJ, Alecandroff AB, James K. Mechanisms of action of intravesical bacille Calmette-Guérin: local immune mechanisms. *Clin Infect Dis* 2000;31(Suppl 3):S91-S93.
2. Higashi Y, Nakamura S, Kidani K, Matumoto K, Kawago K, Isobe J, Kanatani J, Kawagishi Y, Sakamaki I, Yamamoto Y. *Mycobacterium bovis*-induced Aneurysm after Intravesical Bacillus Calmette-Guérin Therapy: A Case Study and Literature Review. *Intern Med* 2018;57:429-435.