



Endourology

Laparoscopic Repair of a Vesicosigmoid Fistula Secondary to Holmium Laser Enucleation of the Prostate (HoLEP)

JiHun Kang^{a,*}, EuiChul Jung^b, YeonJin Jeon^b, InKyu Park^b, Hyeong Gon Lee^c^a Department of Urology, Chonjujeil Hospital, Chonjudaero, 885, Chonju City, 52709, South Korea^b Department of General Surgery, Chonjujeil Hospital, Chonjudaero, 885, Chonju City, 52709, South Korea^c Department of Radiology, Chonjujeil Hospital, Chonjudaero, 885, Chonju City, 52709, South Korea

ARTICLE INFO

Article history:

Received 16 February 2017

Accepted 8 March 2017

Keywords:

Holmium Laser Enucleation of the Prostate

(HoLEP)

Morcellation

Vesicosigmoid fistula

ABSTRACT

Holmium Laser Enucleation of the Prostate (HoLEP) is a safe and effective treatment option for benign prostatic hyperplasia. However, in some cases, it can lead to life-threatening complications. In particular, morcellation of the resected adenoma may be a very dangerous procedure when performed without clear visualization. We describe the first reported case of a vesicosigmoid fistula secondary to a morcellation injury during HoLEP.

© 2017 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

HoLEP consists of two consecutive procedures, enucleation of a prostatic adenoma and intravesical morcellation of the enucleated prostatic tissue. Morcellation of the resected adenoma should ideally be performed with a fully distended bladder. However, when visualization is inadequate or when the procedure is performed by an inexperienced surgeon, this step can be dangerous.

Case presentation

A 68-year-old male patient was referred for treatment of a vesicosigmoid fistula secondary to HoLEP. Three days prior, the patient had undergone a HoLEP for benign prostatic hyperplasia in the urology department of another hospital. He complained of lower abdominal pain and dirty stool-like material in his urine starting from 3 days after his surgery. A CT scan and colonoscopic examination were performed, on the basis of which a fistula between the posterior wall of the bladder and the sigmoid colon was identified (Fig. 1). During the colonoscopy, a small fistula opening with surrounding edema was noted in the sigmoid colon at 20 cm from the anal verge. We performed emergency laparoscopic repair of the vesicosigmoid fistula. The sigmoid colon was tightly attached to the posterior wall of the bladder (Fig. 2). However, no

fecal material was present in the peritoneal cavity. After detaching the colon from the bladder, the presence of a small fistula opening was confirmed. The fistula tract was resected, and interrupted sutures were used to repair the bladder; after which primary repair with wedge resection of the inflamed sigmoid colon was performed. Four days after the operation, the patient complained of lower abdominal pain and had a follow-up CT scan showing bowel wall edema with large amounts of fluid collected in the abdominal cavity. Laparoscopic exploration was performed, and leakage from the primary repair site in the sigmoid colon was noted. Segmental resection and primary closure of the sigmoid colon were performed. Ten days after the second operation, the patient was discharged without any complications. At a follow-up examination 2 months after discharge, the patient reported that he was able to void well, without incontinence. His bowel habits and defecation were also satisfactory.

Discussion

HoLEP has become an alternative to conventional transurethral resection of the prostate (TURP) or open prostatectomy due to its efficacy and safety.¹ Shah et al reported a low incidence of complications with HoLEP, and most were minor and easily managed. Capsular perforation was the most common complication reported. Superficial bladder mucosal injury, and ureteric orifice injury were also reported. Typically, injuries to the bladder mucosa were minor and uneventful. To avoid bladder injury, the authors recommended

* Corresponding author.

E-mail address: jihun00kr@naver.com (J. Kang).

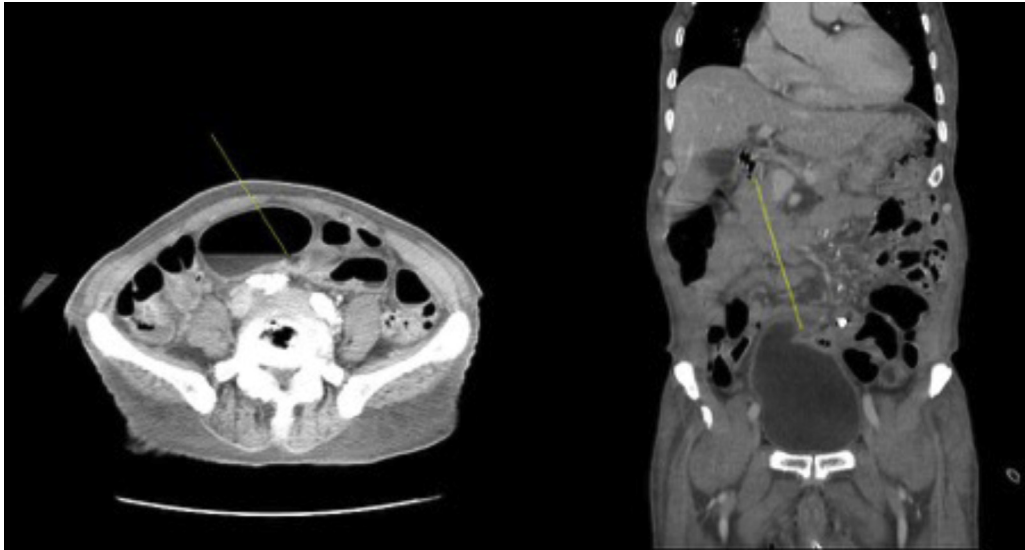


Figure 1. The yellow line on the CT image indicates the fistula tract between the bladder and sigmoid colon (left: transverse section; right: coronal section).

thorough hemostasis and advised that morcellation should be performed with a fully distended bladder.²

To reduce the incidence of severe bladder injury, Lee et al used the inverse technique for tissue morcellation and compared the efficiency and safety between the inverse and upward technique. Regarding the site of reported bladder injuries, 7 and 4 cases occurred in the bladder dome and the posterior wall, respectively, in the upward technique group. In the inverse technique group, injuries were limited to the trigone. All injuries were treated by prolonged catheterization alone.³

El Tayeb et al compared the Wolf Piranha and Lumenis VersaCut prostate morcellation devices. Complications were rare, with no difference between the two morcellators. Only one patient experienced a complication related to morcellation, consisting of a superficial mucosal injury that occurred with the Lumenis device; it was quickly identified and did not require extended catheter placement.⁴

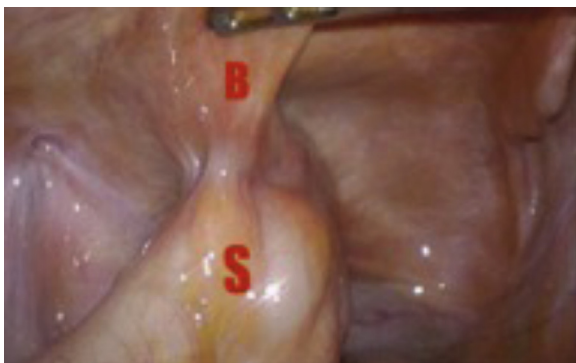


Figure 2. Laparoscopic view: the sigmoid colon was tightly attached to the posterior wall of the bladder (B: bladder; S: sigmoid colon).

Most colovesical fistulas are uncommon complications of diverticulitis and pose a diagnostic and treatment challenge.⁵ However, colovesical fistulas secondary to HoLEP have not previously been reported. To our knowledge, this is the first reported case of vesicosigmoid fistula secondary to a morcellation injury during HoLEP. In most previous reports, injuries to the bladder were minor and easily managed by prolonged catheter placement. However, if the morcellation-related bladder injury is extensive, the patient could experience life-threatening complications.

Conclusion

When performing a HoLEP, meticulous control of the morcellator and clear visualization are crucial.

Conflict of interest

There is no conflict of interest.

References

- Kim M, Lee HE, Oh SJ. Technical aspects of holmium laser enucleation of the prostate for benign prostatic hyperplasia. *Korean J Urol.* 2013;54(9):570–579.
- Shah HN, Mahajan AP, Hedge SS, et al. Peri-operative complications of holmium laser enucleation of the prostate: experience in the first 280 patients, and a review of literature. *BJU Int.* 2007;100(1):94–101.
- Lee SH, Choi JI, Moon KY, et al. Holmium laser enucleation of the prostate: modified morcellation technique and results. *Korean J Urol.* 2012;53(11):779–784.
- El Tayeb MM, Borofsky MS, Paonessa JE, et al. Wolf piranha versus lumenis VersaCut prostate morcellation devices: a prospective randomized trial. *J Urol.* 2016;195(2):413–417.
- Tsivian A, Kyzer S, Shtricker A, et al. Laparoscopic treatment of colovesical fistulas: technique and review of the literature. *J Urol.* 2006;13(5):664–667.