Potential pitfalls of computed tomography scan causing misdiagnosis of bladder perforation

Hideki Katagiri, Kazuhiro Nishida, Yukihiro Kanda, Akira Miyabe

ABSTRACT

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CASE REPORT

An 88-year-old male was presented to our emergency room with lower abdominal pain and hematuria. He had an inserted indwelling bladder catheter for prostate hypertrophy. He had a past history of hypertension for last 40 years and age-related macular degeneration.

Three days before admission, he had the catheter exchanged by his general practitioner. Two days before admission, he recognized macroscopic hematuria. One day before admission, hematuria persisted and he felt slight lower abdominal pain. On the day of admission, the lower abdominal pain persisted, and he came to our emergency room.

On physical examination, his abdomen was soft and flat. There was tenderness in the lower abdominal region and no guarding or rebound tenderness. His body temperature was 36.8°C. Leukocytosis (WBC: 19,300/ μ L) was noted on a complete blood count. The blood urea nitrogen and creatinine levels were within normal limits.

Abdominal computed tomography (CT) scan was performed, suggesting that the tip of the Foley catheter had penetrated the bladder (Figures 1 and 2). There was no other abnormality including peritoneal fluid that can cause lower abdominal pain and hematuria.

An emergent operation was considered, however, his symptom was not severe and when we withdrew the catheter, hematuria was followed by normal yellow urine.

Hideki Katagiri¹, Kazuhiro Nishida¹, Yukihiro Kanda¹, Akira Miyabe¹

Affiliations: ¹MD, Department of Surgery, Tokyo Bay Urayasu Ichikawa Medical Center (Noguchi Hideyo Memorial International Hospital), Chiba, Japan.

Corresponding Author: Hideki Katagiri, MD, 3-4-32, Todaijima, Urayasu city, Chiba, 279-0001, JAPAN; Ph: +81-(0)47-351-3101; Fax: +81-(0)47-352-6237; E-mail: x62h20k38@yahoo.co.jp

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Figures (A, B): Computed tomography scan of coronal and sagittal views of the abdomen suggesting that the Foley catheter had penetrated the urinary bladder, and that the tip of the catheter was in the intra-abdominal cavity.

After displacing the Foley catheter, his abdominal pain was relieved. The Foley catheter was assumed to have been stuck in the bladder diverticulum.

He was admitted for close observation, and was discharged after five days without complications.

DISCUSSION

Urinary catheterization is commonly performed in daily practice [1]. It is usually an easy and safe procedure. However, many complications with indwelling catheters in the bladder have been reported, such as infection, periurethral abscess, bladder stones, and injury to the urethra, hemorrhage, and epididymo-orchitis [1–3]. Male catheterization can be difficult, especially in patients with enlarged prostate glands or other potentially obstructive conditions in the lower urinary tract [3]. Perforation of the urinary bladder due to an indwelling urinary catheter is a rare but life-threatening complication, and usually requires an emergent operation [4, 5].

In this case, CT scan suggested that the Foley catheter had penetrated the bladder and was placed in the abdominal cavity. However, his physical findings did not concur with this. The fact that displacement of the catheter relieved his symptom was also inconsistent with bladder perforation. Finally, we ruled out perforation by physical examination. His clinical course was also inconsistent with bladder perforation, and he was discharged without any complications. We could therefore avoid unnecessary surgery.

A CT scan is frequently performed for diagnostic imaging, especially in Japan. In many cases, it is a reliable method for diagnosis and determining clinical management. However, the images of CT scans are reconstructed imaging and sometimes lead to a misdiagnosis. Abadi et al. reported a similar case of abdominopelvic CT scan, in which it was strongly suggested that a bladder catheter balloon inflated in a bladder diverticulum simulated sealed bladder perforation with the extraluminal location of the balloon [2]. In this case, although there was no evidence of diverticulum in the bladder, the catheter was assumed to be stuck in the diverticulum.

CONCLUSION

Urinary catheterization is usually safe but possibly causes a life-threatening complication. A computed tomography scan is useful. However, we should consider its potential pitfalls causing misdiagnosis.

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Hideki Katagiri – Conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Critical revision of the article, Final approval of the version to be published

Kazuhiro Nishida – Acquisition of data, Analysis and interpretation of data, Drafting the article, Final approval of the version to be published

Yukihiro Kanda – Analysis and interpretation of data, Critical revision of the article, Final approval of the version to be published

Akira Miyabe – Analysis and interpretation of data, Critical revision of the article, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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REFERENCES

1. Raheem OA, Jeong YB. Intraperitoneally placed Foley catheter via verumontanum initially presenting as a bladder rupture. *J Korean Med Sci* 2011;26(9):1241–3.
2. Abadi S, Brook OR, Solomonov E, Fischer D. Misleading positioning of a Foley catheter balloon. *Br J Radiol* 2006;79(938):175–6.
3. Willette PA, Coffield S. Current trends in the management of difficult urinary catheterizations. *West J Emerg Med* 2012;13(6):472–8.

4. Okuda H, Tei N, Shimizu K, Imazu T, Yoshimura K, Kiyohara H. Experitoneal bladder perforation due to indwelling urethral catheter successfully treated by urethral drainage: a case report. Hinyokika Kyo 2008;54(7):501–4.
5. Magee GD, Marshall SG, Wilson BG, Spence RA. Perforation of the urinary bladder due to prolonged use of an indwelling catheter. Ulster Med J 1991;60(2):237–9.

ABOUT THE AUTHORS

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Hideki Katagiri is a resident at department of general surgery, Tokyo Bay Urayasu Ichikawa Medical Center (Noguchi Hideyo Memorial International Hospital), Chiba, Japan. His research interests include General surgery. He intends to pursue a fellowship in cardiovascular surgery in future.

Kazuhiro Nishida is a resident at department of general surgery, Tokyo Bay Urayasu Ichikawa Medical Center (Noguchi Hideyo Memorial International Hospital), Chiba, Japan. His research interests include Trauma and Gastrointestinal surgery. He intends to pursue international medical aid group in future.

Yukihiro Kanda is attending surgeon at department of general surgery, Tokyo Bay Urayasu Ichikawa Medical Center (Noguchi Hideyo Memorial International Hospital), Chiba, Japan. His research interests include surgical critical care. He intends to pursue a fellowship in Trauma/SCC in the US in future.

Akira Miyabe is attending surgeon at department of surgery, Tokyo Bay Urayasu Ichikawa Medical Center (Noguchi Hideyo Memorial International Hospital), Chiba, Japan. His research interests include general surgery and development of community medicine. He intends to pursue a surgeon in small hospital in future.

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