Optical Urethrotome Dislodgement during Optical Internal Urethrotomy: A Case Report of an Unexplained Event

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Abstract

Optical internal urethrotomy is a well-known, safe and effective treatment for urethral strictures post-radical prostatectomy. This case documents an unusual event that occurred during the procedure. A 68-year-old male patient was diagnosed with a urethral stricture post-radical prostatectomy. During optical internal urethrotomy, the blade of the urethrotome broke, after which it was removed using endoscopic forceps.

Keywords: Optical internal urethrotomy, urethral stricture, radical prostatectomy, cold knife.

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Introduction

Since the introduction of visualized cold knife internal urethrotomy by Sachse in 1972,[1,2] it has gained popularity as a simple solution to a difficult problem. This procedure is used in patients with traumatic, post-gonococcal infections or post-prostatectomy urethral strictures. In this case report, we document an unusual adverse event that occurred during optical internal urethrotomy for a post-radical prostatectomy anastomotic stricture.

Case Presentation

A 68-year-old male patient underwent radical prostatectomy for a localized prostate adenocarcinoma in 2008 and presented in 2010 with a 3-month history of progressive obstructive urinary symptoms. After complete reevaluation and exclusion of rising prostate-specific antigen (PSA), he was scheduled for cystourethroscopy, which revealed a long urethral stricture at the vesicourethral anastomosis site. This was followed by optical internal urethrotomy, during which time the operator noticed tough successive fibrous bands. While he was cutting through these bands, the blade of the optical urethrotome knife broke. Direct endoscopic removal of the blade was performed smoothly.

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Discussion

Internal urethrotomy as a treatment for strictures of the anterior urethra has been used for many years, and urethrotomy under vision was introduced by Sachse 1972.[1,2] Since then, several authors have published reports of high success rates using this technique and showed comparable results for non-recurrent strictures with those for open surgery.[3] The simplicity, short hospitalization time, low complication rate, minor patient discomfort, and ability to perform without the need for anesthesia in special cases[4] are the main advantages of internal urethrotomy, making it the treatment of choice in urethral stricture disease.

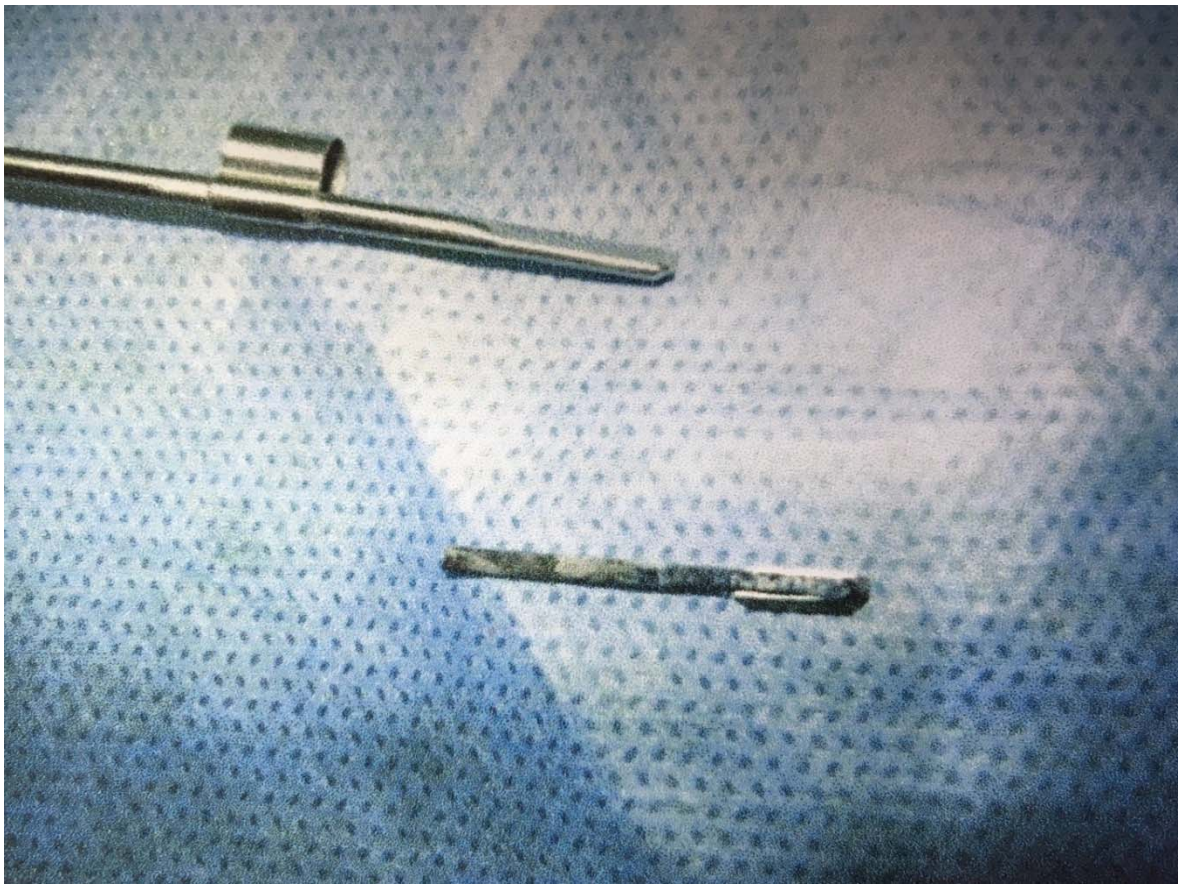

Figure 1: Broken knife of the optical urethrotome after retrieval

Although urethral dilation and internal urethrotomy seem to have equivalent success rates, both are substantially lower than the long-term success rates reported for definitive surgical repair with urethroplasty. A cost-effectiveness analysis supported the early use of urethroplasty after one failed internal urethrotomy, given that the failure rate of urethrotomy increases substantially with repeated procedures.[5] As our patient was diagnosed for the first time with an anastomotic urethral stricture, the decision was made to perform internal urethrotomy. Internal urethrotomy remains a treatment of choice for bulbar urethral strictures < 1 cm with minimal spongiofibrosis.[6]

Cold knife urethrotomy is a safe and

effective initial treatment for patients with anastomotic stricture after radical retropubic prostatectomy.[7] Anastomotic strictures are known complications following radical prostatectomy for prostate cancer,[8] as occurred in this case. A study by Bretheau et al. showed that postoperative fibrous stenosis at the urethrovesical junction occurred in 12% of 150 patients, with a median onset of 4 months.[9] Another study by Park et al. showed that, of 753 radical retropubic prostatectomies, 36 (4.8%) developed one anastomotic stricture, and the mean time interval between the surgical procedure and the diagnosis of the stricture was 4.22 months.[10]

In 2003, Aron et al. published the first documented report of breakage of the blade of a urethrotome in a 62-year-old man with recurrent urethral strictures and an indwelling urethral stent.[11] In 2009, the United States Food and Drug Administration (FDA), using the Manufacturer and User Facility Device Experience (MAUDE) database, reported a similar adverse event, when the tip of the cold knife of the urethrotome broken off while the physician was working on a very hard urethral stricture. In both reported events, the hardness of the fibrous band of the urethral stricture was the direct cause for mechanical overload on the device, causing the optical urethrotome blade to be broken. These events match that reported in this case.

Although cold knife optical internal urethrotomy is still the treatment of choice for urethral strictures of different underlying etiologies, it should be used with caution when a particularly hard stricture is suspected, at which time newer modalities like laser ablation may be considered.

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تقرير طبي لحادث غير متوقع أثناء إجراء عملية لفتح التضيقات الإحليلية منظاريا

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الملخص

تعد أداة قطع التليفات الإحليلية من أهم الطرق العلاجية الآمنة والفعالة لفتح الانسدادات والتضيقات الليفية الناتجة بعد إزالة غدة البروستات. يرصد هذا التقرير الطبي حدثا غير مألوف أثناء إجراء تداخل جراحي بالمنظار لرجل عمره ثمانية وستون عاماً باستخدام هذه الأداة لفتح تضييق إحليلي بعد استئصال غدة البروستات، حيث انكسرت مقدمة السكين القاطع للتليفات الإحليلية أثناء العملية الجراحية.

الكلمات الدالة: التضيقات الإحليلية، استئصال غدة البروستات، السكين القاطع للتليفات الإحليلية.