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ACCIDENTAL EROSION OF AN ARTIFICIAL URINARY SPHINCTER SECONDARY TO URETHRAL CATHETERISATION WHILST UNCONSCIOUS

Urology

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KEYWORDS

INTRODUCTION

The artificial urinary sphincter is an invasive treatment option for urinary incontinence. The apparatus, as can be seen in figure 1, includes a pressure regulating balloon, which is placed in the pre-peritoneal space, which is connected to a control pump implanted in the scrotum that the patient operates when he requires to void. The final part of the apparatus is a urethral inflatable cuff, which is sized and placed at an appropriate part of the bulbar urethra. The cuff remains closed at all times, therefore 'squeezing' the urethra closed. Upon activation of the pump, this draws water out of the cuff, and into the suprapubic reservoir, thereby relaxing the cuff and allowing the urethra to 'open'. This then allows the patient to void and is normally open for up to 1-2 minutes, after which the cuff re-inflates.

Post-prostatectomy urinary incontinence is the most common indication for the insertion of this device and has shown to give excellent rates of continence (1, 2). Other indications for this include intrinsic sphincter pathology and traumatic urethral injuries such as from pelvic fractures. In women, the artificial urinary sphincter can be used for failed conservative and medical management for severe stress urinary incontinence.

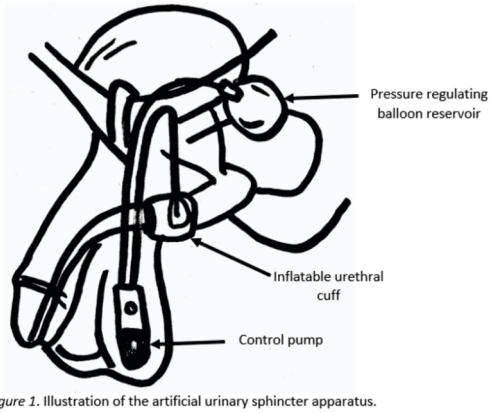

Figure 1. Illustration of the artificial urinary sphincter apparatus.

BACKGROUND

A 66 year gentleman with a background of a radical prostatectomy performed due to localised prostate cancer 6 years ago, was referred to the specialist Urology outpatient clinic. Besides a background of prostate cancer, he also had a history of excessive alcohol intake. He was not taking any regular medications, and his follow up prostate specific antigen (PSA) for the past 6 years did not reveal any evidence of biochemical recurrence.

Postoperatively from this radical prostatectomy, he failed to achieve complete continence after 12 months and was offered the option of an artificial urinary sphincter, which he underwent. The procedure was carried out successfully. The patient has had the artificial urinary sphincter for nearly 5 years now and was comfortable in using it.

CASE REPORT

The patient, unfortunately, was admitted to the accident and emergency department following an evening of heavy alcohol intoxication, leading to a fall and a head injury. He was brought to the hospital as an emergency, unconscious, and a primary survey was carried out. He was found to be hypotensive at 96/68mmHg and tachycardic at 105bpm. As a result, intravenous access was gained and fluid resuscitation was commenced. The lead doctor also ordered for urinary catheterisation in order to monitor the urine output of the patient. Unfortunately, as the patient was unconscious and thus unable to provide any history, the doctors and nurses were unaware of his past medical and surgical history, including the presence of an artificial urinary sphincter. Therefore, as with any other patient, he was attempted to be catheterised per urethra, without deflation of the sphincter. The 14 Fr catheter was naturally met with resistance at the level of the bulbar urethra, and a further few attempts at catheterisation by another doctor also subsequently failed. Only once the patient regained consciousness and made a recovery from his fall, was he able to bring to light his surgical history. He noted that he had started to become incontinent again, and thus was referred to the Urologist.

INVESTIGATIONS

A detailed history pointed towards the probable working diagnosis of this case. Examination of the abdomen did not reveal a palpable bladder, and no abnormalities of note were made for the external genitalia. The control pump in the scrotum was palpable and was in the usual position according to the patient. Diagnostic flexible cystoscopy was performed, which instantly revealed the reason for his new incontinence. As can be seen in figures 2 and 3, the dorsal part of the bulbar urethra has been completely eroded as a result of traumatic catheterisation attempts, and as a result, the urethral cuff is in view, which normally should not be. The urethral mucosa has eroded and there were some signs of scarring as part of the healing process. Unfortunately for this patient, his artificial urinary sphincter had now been rendered useless and would require surgical removal and consideration of re-insertion. In the interim, however, he was back to using continence pads.

DISCUSSION

This case highlights the importance of history and examination in every patient. This is obviously extremely difficult in an unconscious patient, however in such situations, every attempt should be taken to get a collateral history from the patient's family, friends or relatives if available. Once the problem is identified, utmost care should be taken to prevent further damage and referral to the specialist should be made immediately as was the case in this patient. The patient had suffered an unfortunate event that led to the loss of his artificial urinary sphincter, and replacement of such devices is invasive, expensive and requires a period of hospital stay and rehabilitation.

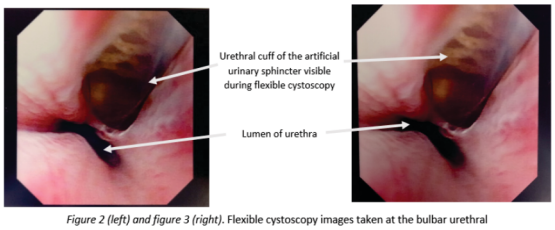

Figure 2 (left) and figure 3 (right). Flexible cystoscopy images taken at the bulbar urethral level clearly illustrating erosion of the urethral cuff into the lumen of the urethra.

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