



Prosthesis implantation after radial free flap phalloplasty in patients with bladder exstrophy

A Ballaro*¹, J Pryor¹ and D Ralph¹

¹The Institute of Urology and Nephrology, 48 Riding House Street, London, W1P 7PN, UK

Methods: Inflatable penile prosthesis were implanted into sensate radial free-flap phalloplasties in two adult patients with bladder exstrophy.

Results: Neither patient reported loss of sensation, and both were able to inflate the prosthesis and engage in sexual intercourse three months later.

Conclusion: The construction of a functional neophallus is well described however has not previously been reported in exstrophy patients who are suited to this procedure due to the presence of crura, and the absence of a neourethra. Scarring from previous reconstructive procedures however may make implantation difficult, and long-term follow up is required to evaluate this procedure in patients with bladder exstrophy.

Keywords: exstrophy; prosthesis; phalloplasty; reconstruction

Introduction

Exstrophy of the bladder is a rare but devastating malformation, which is associated with a normal life expectancy but substantial long-term physical and psychological morbidity.¹ Many procedures are used for penile reconstruction in exstrophy patients, however penile inadequacy remains one of the main causes of morbidity.² The construction of a cosmetically acceptable and functional neophallus using the radial free-flap phalloplasty and implanted penile prosthesis has been described for use in a number of conditions.³ We describe the use of this technique in two patients with bladder exstrophy.

Case report

Two male patients with bladder exstrophy aged 21 and 27 y, presented requesting the insertion of a penile prosthesis. Both patients had a sensate radial free-flap phalloplasty, which had been performed several years earlier after multiple failed penile reconstructions, and both had undergone urinary diversion in childhood. After counselling and with triple antibiotic prophylaxis, inflatable penile prosthesis were inserted within dacron sheaths into both phalloplasties using a standard penoscrotal incision. In one case the prosthesis was anchored to the

crura, in the other its proximal end was housed within a 'pocket' fashioned within remnants of the corpora. The reservoirs were implanted in the standard position. The Dynaflex and AMS 700 CXM prosthesis were used. Recovery was uneventful in both cases, and neither patient reported loss of phallic sensation. The patients were taught to inflate the prosthesis immediately after the procedure (Figure 1), and both were able to engage in sexual intercourse three months post operatively.

Discussion

Total phallic construction has been described for gender dysphoria, congenital micropenis, and for patients who have suffered penile loss due to infection, malignancy or trauma.^{3,4} It has not previously been reported in patients with bladder exstrophy. Exstrophy patients are suited to this procedure as the prosthesis can be anchored to the crura, which are probably of normal length.² Absence or inadequacy of crura in other patient groups necessitates anchorage of the prosthesis to the pubic periosteum with the risk of periostitis or public osteomyelitis. In addition, the common absence of the need for a neourethra due to previous urinary diversion makes insertion of the prosthesis less hazardous, and infection secondary to urinary tract sepsis less likely.⁵ Erosion of the prosthesis is minimised by ensuring that the phalloplasty is sensate prior to its insertion,³ and by using an inflatable device which minimises ischaemic

*Correspondence: Mr A Ballaro FRCS, Institute of Urology and Nephrology, 48 Riding House St, London W1P 7PN



Figure 1 Inflated penile prosthesis after insertion into a radial free flap phalloplasty in a patient with bladder exstrophy.

damage to the flap by chronic tissue pressure. We believe that the AMS CXM prosthesis is best suited to this procedure as its tapered proximal end may be accommodated within a pocket fashioned within remnants of the corpora, which may be present.

The risk of infection of a penile prosthesis is high and the inevitable scarring from previous attempts

at penile reconstruction in exstrophy patients may make the insertion of the prosthesis difficult. Five-year follow up of total phallic reconstruction has only been reported in three transsexual patients.⁶ More follow-up studies of this procedure in all patient groups are required to enable its full evaluation.

References

- 1 Woodhouse CRJ. *Long Term Paediatric Urology*. Oxford Blackwell: Oxford, 1991, pp 127–150.
- 2 Silver RI *et al*. Penile length in adulthood after exstrophy reconstruction. *J Urol* 1997; **157**: 999–1003.
- 3 Levine LA, Zachary LS, Gottlieb LJ. Prosthesis placement after total phallic reconstruction. *J Urol* 1993; **149**: 593–598.
- 4 Jordan GH *et al*. Penile prosthesis implantation in total phalloplasty. *J Urol* 1994; **152**: 410–414.
- 5 Hage JJ. Dynaflex prosthesis in total phalloplasty. *Plast Reconstr Surg* 1977; **99**: 479–485.
- 6 Khouri RK, Young VL, Casoli VM. Long-term results of total penile reconstruction with a prefabricated lateral arm free flap. *J Urol* 1988; **160**: 383–388.