Case Report

Salvage Procedure in Case of Urethrocavernous Fistula after Revision Surgery for Malfunctioning Three-Piece Penile Prosthesis

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Urethrocavernous fistula is a rare complication of penile prosthesis. Literature lacks any materials regarding this complication's treatment. We report our experience with a 66-year-old man who developed urethrocavernous fistula after penile prosthesis implant. Our technique involves the careful closure of urethral and corpus cavernosum defects with application of TachoSil® above the sutures. After the salvage procedure, no recurrence of fistula occurred and patient was able to have sexual intercourse. We believe that our technique may be successfully used in case of urethrocavernous fistula after penile prosthesis implant.

1. Introduction

Nowadays, penile prosthesis implant represents the definitive treatment of erectile dysfunction in those patients in which phosphodiesterase type 5 inhibitor, intracorporeal injection, and/or vacuum device are ineffective [1].

Three-piece inflatable prosthesis, mostly with an antibiotic coating, is the preferred choice [2], although some urologists still prefer malleable prosthesis as being less expensive and easier to implant than inflatable ones. It has been proved that hydraulic three-component prosthesis improves the quality of life of the patient with severe ED [3].

Intraoperative complications of inflatable prosthesis involve the urethra, the bladder, and intestine. Breakage of the device is also a possible complication during implantation.

Urethral injuries may occur during dilatation of corpora cavernosa and can especially affect scarred tissue. Bladder and visceral injuries can happen during the positioning of the reservoir especially with the penoscrotal incision.

Postoperative complications include infection (1.7–15%) and mechanical disorders of the prosthesis (fluid loss, cylinder rupture, and mechanical breakage) with a percentage ranging from 1.4% to 11% [4, 5].

Most of these complications require removal of the prosthesis.

We present a case of urethral injuries which occurred during a penile prosthesis implant followed by urethrocavernous fistula which developed one month after the surgery.

2. Case Presentation

The patient is a 66-year-old man with a history of diabetes, obesity, high blood pressure, and erectile dysfunction non-responsive to both systemic and local treatment. For this reason, he underwent a 3-piece Inflatable Penile Implant in 1996 in another centre. Because of prosthesis malfunction, he had revision surgery of the implant in 2000 and 2004 in the same centre. Patient had been using implant up to 2007. Subsequently, the device had a mechanical failure and patient was not able to have sexual intercourse anymore.

In 2009, he underwent a radical prostatectomy for prostate cancer.

As mentioned above, penile prosthesis was not functioning. As a consequence, the reservoir was removed while cylinders and scrotal pump were left implanted in the penis. In April 2013, he underwent a revision surgery of the nonfunctioning system on the patient's request.

A transverse skin incision at the penoscrotal junction was made and the cylinders-reservoir connecting tube was isolated up to internal inguinal ring. An artificial erection
was inducted using saline solution. The manoeuvre showed a nonlasting erection, suggesting a water loss from the cylinders. For this reason, we decided to remove both the pump and the cylinders and make a new implant. A 2 cm corporotomy was made bilaterally and cylinders were removed. Unfortunately, a 3 cm length urethral lesion occurred during the isolation of connecting tubes between pump and left cylinder by electric cautery knife. Urethral catheter was evident through the lesion as shown in Figure 1.

Strict adherence between connecting tubes and corpus spongiosum of urethra may have facilitated the occurrence of the lesion. We decide to close the urethral defect with a monocryl 4/0 continuous suture. Implantation of a new AMS 700, 3-piece inflatable penile prosthesis was immediately performed.

At the end of the procedure, a sovrapubic catheter was inserted. Urethral catheter was also left in situ.

On May 2013, 30 days after the procedure, a voiding cystourethrogram showed a radiocontrast leak suggesting a persistence of urethral lesion one month after the implant (Figure 2); the retrograde urethrography was avoided for the infection risk.

We suspected the presence of an urethrocavernous fistula because the lesion was at the penoscrotal junction level, the same level of corporotomy. Fistula strongly increases the risk of infection of penile prosthesis. In spite of this, we decided to perform a salvage procedure in order to repair the fistula trying not to remove the implant.

First step was an accurate isolation of the urethra up to the bulbar portion and its separation from corpora cavernous to the urethrocavernous fistula was identified. The maneuver resulted in the separation of the fistula. Length of urethral and left corpus cavernous defect was about 2 cm and 1 cm, respectively. Defects were located at the penoscrotal angle (see Figure 3).

After wound and prosthesis washing with different antiseptic solutions including antibiotics, hydrogen peroxide, and betadine [5], we closed the urethra and corpus cavernosum defect by 4/0 PDS double layer suture and 3/0 monocryl suture, respectively.

With the aim of preventing fistula recurrence, we decided to use a patch sponge coated with a dry layer of the human coagulation factors fibrinogen and thrombin (TachoSil) [6].
In addition, patient had been complaining of moderate urinary incontinence due to the previous radical prostatectomy. In fact, he reported urine leakage around the catheter between catheter and urethra during Valsalva maneuver after the first procedure. As a consequence, urethral suture was not completely dry and this could have facilitated fistula arising.

On the contrary, complete isolation of corpus spongiosum, careful suturing of urethral and corpus cavernous defects, and application of TachoSil to reinforce sutures allowed us to repair fistula and avoid its recurrence.

Drainage of urine by suprapubic and urethral catheter is also an essential step.

4. Conclusions

We believe that technique described in this salvage procedure may be used in case of urethrocavernous fistula after insertion of penile prosthesis.

In particular, we were able to avoid fistula recurrence without removing the implant.

Conflict of Interests

The authors declare that there is no conflict of interests.

References

[1] D. K. Montague and K. W. Angermeier, "Contemporary aspects of penile prosthesis implantation," Urologia Internationalis, vol. 70, no. 2, pp. 141–146, 2003.

[2] C. C. Carson, J. J. Mulcahy, F. E. Govier, and AMS 700 CX Study Group, "Efficacy, safety and patient satisfaction outcomes of the AMS 700 CX inflatable penile prosthesis. Results of a long term multicenter study," Journal of Urology, vol. 164, no. 2, pp. 376–380, 2000.

[3] E. Caraceni and L. Utizi, "A questionnaire for the evaluation of quality of life after penile prosthesis implant: quality of life and sexuality with penile prosthesis (QoLSPP). To what extent does the implant affect the patient’s life?" Journal of Sexual Medicine, vol. 11, no. 4, pp. 1005–1012, 2014.

[4] C. Bettocchi, F. Palumbo, M. Spilotro et al., "Penile prostheses," Therapeutic Advances in Urology, vol. 2, no. 1, pp. 35–40, 2010.

[5] J. J. Mulcahy, "Surgical management of penile prosthesis complications," International Journal of Impotence Research, vol. 12, supplement 4, pp. S108–S111, 2000.

[6] G. L. Colombo, D. Bettoni, S. Di Matteo et al., “Economic and outcomes consequences of TachoSil®: a systematic review,” Vascular Health and Risk Management, vol. 10, pp. 569–575, 2014.

[7] C. Bettocchi, P. Ditonno, F. Palumbo et al., "Penile prosthesis: what should we do about complications?" Advances in Urology, vol. 2008, Article ID 573560, 5 pages, 2008.

[8] A. Minervini, D. J. Ralph, and J. P. Pryor, "Outcome of penile prosthesis implantation for treating erectile dysfunction: experience with 504 procedures," BJU International, vol. 97, no. 1, pp. 129–133, 2006.

[9] B. Juaneda Castell, M. Montléo González, X. Ponce de León Roca, L. I. Gausa Gascón, J. Caparrós Sariol, and H. Villavicencio Mavrich, "Urethrocavernous fistula due to penile fracture," Actas Urologicas Espanolas, vol. 32, no. 10, pp. 1043–1045, 2008.
[10] H. G. Motiwala, “Urethrocavernous fistula following sexual intercourse,” *The Journal of Urology*, vol. 149, no. 2, p. 371, 1993.

[11] D. M. Robbins, E. D. Crawford, and H. L. Lackner, “Late development of a urethrocavernous fistula after cavernospongiosum shunt for priapism,” *Journal of Urology*, vol. 132, no. 1, pp. 126–127, 1984.

[12] D. L. García, P. C. Agudo, J. M. J. Pais et al., "An infrequent complication of a penile prosthesis," *Archivos Españoles de Urología*, vol. 62, no. 6, pp. 510–511, 2009.