Pain Prevents The Early Activation Of Inflatable Penile Prostheses

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Citation

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Abstract

Introduction:All prosthetic implants are subject to fibrous capsule formation. If capsule formation occurs around a deflated inflatable penile prosthesis (IPP) this may constrict inflation, decreasing the length, girth of the erect penis. To minimise this risk, experts now recommend activation and cycling of the prosthesis as early as two weeks. Accordingly, from 2011, we aimed for early activation of all devices implanted at our institution.
Materials and Methods:We conducted a retrospective audit of all IPPs implanted at our institution in 2011. All cases were carried out in accordance with the 'Perito Minimally Invasive Techique'. Operation and review notes were accessed via electronic medical records. Results: 10 cases of IPP implantation were performed at our institution in 2011. The average age of our patients was 54 years (range 28 to 69). Only one patient was able to activate his prosthesis at two weeks post operatively. The remaining 90% patients were unable to activate their prosthesis due to pain. The mean time between implantation and activation was 44 days (range 17 to 57). Conclusion:Our data suggests that the early activation of IPPs, despite being beneficial for capsule prevention, may not be possible due to pain in the majority of cases.

INTRODUCTION

All prosthetic implants are subject to fibrous capsule formation. If capsule formation occurs around a deflated inflatable penile prosthesis (IPP) this may constrict inflation, decreasing the length, girth and shape of the erect penis [1]. Capsule formation around an implant may be reduced by expansion exercises [2]. To minimise the risk of capsule formation, experts are now recommending activation and cycling of the prosthesis as early as two weeks [3]. Thus patients are advised to begin cycling the device at two instead of six weeks post-operatively. Accordingly, from 2011, we aimed for early activation of all devices implanted at our institution. We present an audit of our experience one year on.

MATERIALS AND METHODS

We conducted a retrospective audit of all cases of IPP implantation performed at our tertiary institution in 2011. All prosthesis were implanted via an infrapubic approach in accordance with the 'Perito Minimally Invasive Techique,' whereby a 3cm infrapubic incision is made, with 1.5cm corporotomy incisions. [4]. This technique included placement of a drain in the scrotum for 24 hours to prevent painful hematoma collection around the pump, and reduce risk of infection. All implantations were performed by the same prosthetic urologist. 10 penile prostheses were implanted; the AMS 700 in 6 cases, and the Coloplast Titan in 4 cases. All patients were admitted to the hospital overnight. All patients had their drain removed, and were discharged the following morning. Patients were followed in the outpatient clinic at two weeks where an attempt was made to activate the device. Should pain prevent activation a follow up appointment was made at two weekly intervals until activation and cycling could occur. Patients were then reviewed at six months to ensure that no complications occurred.

Operation and review notes were accessed via electronic medical records. De-identified patient demographic information, including age and cause of impotence where recorded. Additionally, time to successful activation of the device (full inflation) was calculated. As this study represented evaluation of current practice, ethics approval was not required by our institution. No funding was received to complete this project.

RESULTS

10 cases of IPP implantation were performed at our

institution in 2011. The average age of our patients was 54 years (range 28 to 69 years). The aetiology of erectile dysfunction (ED) was varied; radical prostatectomy in 3 cases, diabetic ED in 3 cases, Peyronie's disease in 3 cases and extended priapism in 1 case.

Only one patient was able to activate his prosthesis at two weeks post operatively. The remaining 90% patients were unable to activate their prosthesis due to pain. Consequently the mean time between implantation and activation was 44 days (range 17 to 57 days). At mean follow-up of 4.5 months, no infected prostheses had been detected.

As outlined in the methodology section patients who were unable to activate their device were rebooked for review every two weeks until they were able to activate and cycle their device. The data set was then split into those who were able to activate their device earlier and later than 42 days (six weeks). This delineation revealed that 40% of patients were able to activate their device early. The mean time of activation within this group was 34 days.

DISCUSSION

In previous years our institution has not attempted to activate IPPs until six weeks post insertion. We instruct patients to inflate their device to maximal tumescence four times daily, leaving it inflated for ten minutes each time. Our attempts to activate IPPs at two weeks post-insertion would appear over all to have been unsuccessful given our mean activation time of 44 days. However, in 40% of cases activation earlier than 42 days was achievable. Of those patients able to activate their device prior to 42 days, the mean activation time was 34 days.

However, the mean activation time for the 60% of patients who could not activate by six weeks was 52 days. Longer-term evaluation will be necessary to determine if there is any significant difference in penile length, girth, or patient satisfaction between the two groups.

Our study suffers several weaknesses. Firstly, we did not quantify pain with visual analogue pain scores. Rather, at each review an attempt was made by the prosthetic urologist to activate the device. This was terminated should the patient develop significant pain and request the surgeon not to proceed. The second weakness is the small number of patients involved. Thirdly, there is a lack of long term follow up data to determine if there are fewer complication within the early activation group.
Despite there being no published data on the incidence of significant capsule formation, it is a regular topic for discussion at prosthetic urology meetings. Mechanical failure rates have been estimated to occur in 6-14% [5-7] and it is unclear what portion of these is contributed to by restrictive capsule formation. Nevertheless, patient satisfaction has been shown to be independent of subjective penile length loss [8] and therefore the additional time and effort spent with patients attempting early activation may result in minimal benefit to the patient.

In summary, our data suggests that the early activation of IPPs, despite being beneficial for restrictive capsule prevention, may not be possible due to pain in the majority of cases.

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