Case Report

An unexpected event during revision penile prosthesis: Evidence base decision making

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Abstract

This gentleman was implanted with Inflatable Penile Prosthesis (IPP) in 2015. After surgery, there is no complication but he felt pain when fully inflated IPP. Last year implant was completely malfunction without any sign of infection. He needed to revise IPP. Intra-op findings were one cylinder tubing was cut and ligated with silk, minimal pus at reservoir area. Revision procedure was proceeded former implant was removed, Corporal bodies were washout. New implant placed and reservoir placement at new infrapubic area. On follow up there is no infection. IPP worked well with satisfied girth and rigidity. This report is aim to present an unusual event during revision procedure and evidence base decision making to achieve surgical outcome.

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Introduction

First introduction in 1973, IPP is the gold standard for Erectile Dysfunction (ED) for medically refractory ED. Ongoing improvements have greatly improved all outcome measurements, with contemporary studies reporting consistently high satisfaction and lower complication rates. Somehow revision rate is also climbing because of infection, mechanical failure, unsatisfied etc. Currently, infection rates for primary IPPs range from 1-3% with modern devices[1,2]. Infection risk with revision surgery increases, but with widely variable reported rates ranging from 3-25%. In this case, I presented a strategy to prevent infection and some decision making to achieve goal of surgery.

Case Report

A 37 year-old man without any underlying disease presented to my clinic with non function IPP without any sign of infection. He underwent IPP in 2015 from vascular problem. It worked well but he felt pain in cylinder area when fully inflated. Last year, IPP was malfunction and he noticed that reservoir migrated down to scrotum (Figure 1). On physical exam, there is no sign of infection, both cylinders located in penile shaft, reservoir partially migrated down to scrotum. Failure to inflate cylinders after pushing pump. Plan was to remove prior implant and place a new one. On operation day, he took a shower and scrubbed whole body with Hibiscrub. Amoxiklav 1.2 mg injected pre operatively. In operating room, hair was clipped, surgical site scrubbed with povidone iodine scrub solution for 15 min. Incision was made at prior incision, penoscrotal. Right cylinder tube was cut separately from pump and ligated with silk so there was only one working cylinder. Pump also removed. Reservoir with 30 ml. of NSS partially migrated from left groin to scrotum. Pus 10 ml. found in reservoir pouch (Figure 2). Former implant was Coloplast Titan STD 18 cm. with 2 cm. RTE. I decided to proceed for revision operation even pus seen.

Figure 1. Downward migration of reservoir.

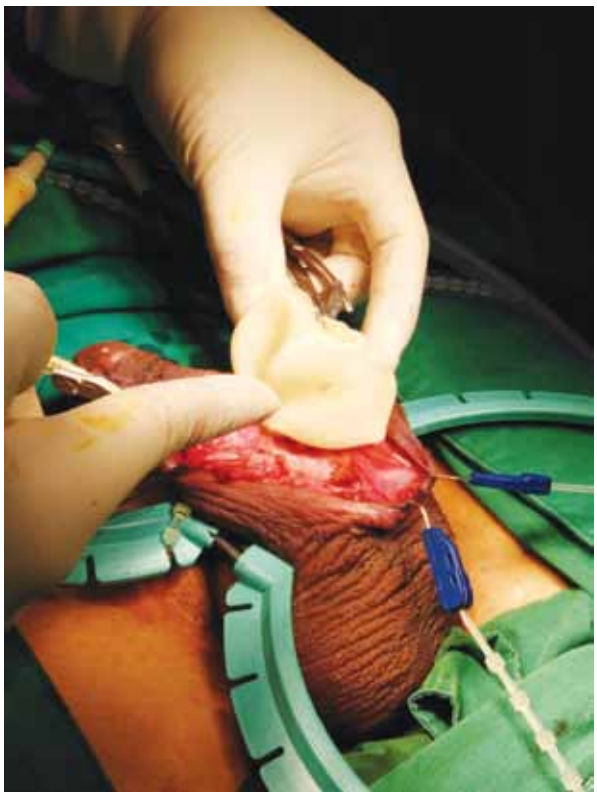

Figure 2. Pus in reservoir pocket.

All space was washout follow Mulcahy Washout Protocol (Table 1). Corporal body were measured. A new implant, Coloplast Titan STD 16 cm. with 2 cm. RTE, introduced. System and reservoir were checked. Due to he had right Herniorrhaphy

in young age. Reservoir placed at Retzius' space through transversalis fascia by opened another infrapubic incision. The circuit was connected and functional test was performed. Corpora closed, skin approximated without drain.

After operation he was discharged 24 hrs. post operatively with 7 days course of Amoxiklav. He had no fever and pain gradually reduced. On 1 month follow up there is no infection, he started inflating implant.

Discussion

After IPP served as the last resort for medicated non responders ED patients for many decades. Many reasons for implant revision are from mechanical failure8, infection, other complications from implant such as deformity, erosion, organs injury. Infection rate for new case is estimated to be between 1% and 3% and between 10% and 18% for repeat implantations[3]. Henry et al, found culture positive in uninfected IPP removed for revision. Penile Implant Infectious risk factors devided into patients related and surgical related. Infection risk was 1.88% for diabetics vs 1.53% for non-diabetics for a relative infection rate increase of 23% (p=0.0052). Active smoking was found to carry an increased infection odds ratio of 1.79. Level 3 evidence from a single-surgeon study compared with same-surgeon historical controls found that the combination of the no-touch technique with IPPs coated with infection retardant decreased their center's implant infection rate to 0.46%.

Traditionally management when IPP has infection. All components were removed, antibiotic given and let infection cleared for several months and then executed revision surgery. But this may cause corporal fibrosis, shortening. insertion of a second IPP more challenging and prone to future infections and other complications. Malcahy[4] developed a washout protocol for salvage Penile Prosthesis Infection revision (cleansing the wound and replacing the implant at the same procedure). The success rate of 'salvage' in this series of 101 patients was 84%. Kaufman *et al*.[5] reported long term infection free follow Malcahy protocol.

Utilizing a malleable as a temporary implant is another option for delayed revision surgery in severe infection case. Lao[6] reviewed utilizing malleable prosthesis (AMS Spectra or Coloplast Genesis) as a temporary space-filling corporal implant to prevent fibrosis. On mean follow up 8.4 month 69% satisfied with malleable implant, 31% proceeded to IPP revision.

Table 1. Mulcahy Salvage Protocol.

Remove all prosthetic parts and foreign materials
Washes 1 and 7: kanamycin and bacitracin
Washes 2 and 6: half-strength povidone iodine
Wash 4: water pic pressure irrigation with vancomycin 1 g and gentamicine 80 mg in normal saline 5L
Change gowns, gloves, drapse, and instruments
Implant new prosthesis
Primary wound closure without drains

In this case there is no sign of infection on physical exam. This is an unusual presentation of infected implant. Implanters must prepare for unexpected events during revision surgery. Prior to operation, no sign of infection but when situation needed for proper decision weather to proceed to revision new implant or to postpone until infection was cleared. Implanters should have evidence base decision making and weigh on outcome. Before revision operation, patients should be informed all possible results and make a decision with implanter.

Conclusion

After decades, IPP proved as the final solution for ED. Infection is the most horrified complication. Implanters should prevent infection strictly. Patients also counseled about all possible outcomes. During revision operation, we should prepare for unexpected events and select good choice for patients.

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