

COMMENT OPEN



Commentary: Value of prolonged scrotal drainage after penile prosthesis implantation: a multicentre prospective nonrandomized pilot study

Wai Gin Lee ¹✉, Philippa Ralph¹ and David Ralph ¹

© The Author(s) 2023

IJIR: Your Sexual Medicine Journal; <https://doi.org/10.1038/s41443-023-00740-2>

There is a surgical aphorism that has been repeated time and time again: “you never regret leaving a drain in”. However, does this hold true in contemporary clinical practice? The question of placing a scrotal drain following uncomplicated (“virgin”) inflatable penile prosthesis (IPP) insertion has been debated for decades. Current estimates of the risk for developing haematoma following uncomplicated IPP insertion is around 5% in high volume centres [1]. The risk of haematoma following “complex” IPP are higher. Scrotal haematoma results in slower recovery, more pain and complicate cycling of the device. The pump may also migrate to a less accessible location. The haematoma will eventually drain through the surgical wound leading to skin dehiscence and device infection and/or erosion.

Some surgeons are reluctant to place a closed suction scrotal drain after uncomplicated IPP insertion due to the risk of infection [2]. Bacteria may theoretically migrate along the drain tubing and into the wound bed. The drain may also fracture, and a fragment could be retained in the wound. It is also inconvenient for the patient because they may need to return to the office for the drain to be removed. For the surgeon, placing a drain would incur higher costs and take more surgical time [3].

This study by Osmonov et al. is therefore a welcome addition to the literature [4]. The multicentre prospective non-randomised pilot study compared outcomes following IPP insertion via penoscrotal approach in uncomplicated cases [4]. Patients were divided into 3 groups based on the duration of closed-suction drainage of the scrotum postoperatively. Group 1 ($n = 114$) did not have a drain placed; group 2 ($n = 114$) had a drain placed for 24 h while group 3 ($n = 117$) had a drain placed for 72 h.

The 72 h group had a lower incidence of postoperative scrotal haematoma compared to the 24 h group and the no-drain group. The risk of infection following IPP insertion was the same between those with or without a drain. As expected, developing haematoma at 24 h after surgery was associated with a higher incidence of postoperative infection. This finding gives further comfort to surgeons when placing a closed suction drain that the risk of infection will be no higher. Interestingly, the infection rate in the study was higher than would be expected in a cohort of uncomplicated patients following IPP implantation.

There is a dearth of urology-specific data on the value of a scrotal drain following IPP implantation. Drain output increases

with a longer surgical time and the rate of drain output is much higher in the first 12 h after surgery compared to the second 12 h period after surgery (11.0 and 2.5 mL/h respectively) [5]. However, whether a scrotal drain prevents postoperative haematoma could not be determined because the study did not have a control group. The drain volumes reported were also surprisingly high (mean volume 161.1 mL).

A much larger retrospective cohort study reported a post-operative infection rate of 3.3% following IPP insertion [6]. This older study from 2005 also did not have a control group and the devices were not antibiotic- or hydrophilic-coated. The scrotal haematoma rate was 0.7%. The report concluded that the use of a closed-suction drain did not increase the risk of prosthesis infection while minimising the risk of haematoma formation. The other data referenced in the literature are conference abstracts (without peer review) and should be interpreted with caution.

A key unanswered question is how this protocol can be implemented in clinical practice and specifically, how patients can be counselled to accept this. The paper alluded to this conundrum in the last sentence of the discussion. The authors declared that “preoperative counselling and postoperative management of the patients may be heterogenous owing to the multicentric nature of our study”. If compliance within the context of a clinical trial may not have been complete, patients would need to be counselled carefully and understand the benefits of prolonged surgical drainage despite the inconvenience. Many institutions discharge men on the same or following day and they would then need to return for the drain to be removed.

Also, daily drain outputs were not measured in the study. These data may have allowed surgeons to “triage” or predict those who will need 72 h drains and those who may have their drain removed earlier. However, the recent paper by Braun et al. reported that a haematoma requiring surgical drainage tended to occur within 72 h of implantation, despite acceptable post-operative drain outputs within the first 24 h [1]. These findings support the proposal to leave scrotal drains for 72 h, particularly following complex IPP insertion.

In conclusion, the study by Osmonov et al. is an important contribution to the literature on the benefit of a scrotal drain following uncomplicated IPP implantation. The take home message is that a drain is unlikely to increase the risk of infection

¹Department of Urology, University College London Hospitals, London W1G 8PH, UK. ✉email: waigin.lee@andrology.co.uk

Received: 15 June 2023 Revised: 29 June 2023 Accepted: 10 July 2023

Published online: 24 July 2023

following surgery, and surgeons should have a low threshold to leave the drain in for longer as it will reduce scrotal haematoma risk. A randomised controlled trial may never eventuate meaning that the results of this study should give further confidence to surgeons contemplating whether to place a scrotal drain.

REFERENCES

1. Braun AE, Swerdloff D, Sudhakar A, Patel RD, Gross MS, Simhan J. Defining the incidence and management of postoperative scrotal hematoma after primary and complex three-piece inflatable penile prosthesis surgery. *Int J Impot Res.* 2023. <https://doi.org/10.1038/s41443-023-00697-2>.
2. Kramer A, Goldmark E, Greenfield J. Is a closed-suction drain advantageous for penile implant surgery? The debate continues. *J Sex Med.* 2011;8:601–6.
3. Köhler TS, Hellstrom WJG. Using wound drains for the uncomplicated penile prosthesis. *J Urol.* 2011;186:1187–9.
4. Osmonov D, Ragheb AM, Petry T, Eraky A, Bettocchi C, Lamers KG, et al. Value of prolonged scrotal drainage after penile prosthesis implantation: a multicenter prospective nonrandomized pilot study. *Int J Impot Res.* 2023. <https://doi.org/10.1038/s41443-023-00710-8>.
5. Apoj M, Rodriguez D, Barbosa P, Pan S, Rajender A, Biebel M, et al. Closed suction drain outputs at 12 and 24 h after primary three-piece inflatable penile prosthesis surgery. *Int J Impot Res.* 2020;32:117–21.
6. Sadeghi-Nejad H, Ilbeigi P, Wilson SK, Delk JR, Siegel A, Seftel AD, et al. Multi-institutional outcome study on the efficacy of closed-suction drainage of the scrotum in three-piece inflatable penile prosthesis surgery. *Int J Impot.* 2005;17:535–8.

AUTHOR CONTRIBUTIONS

Conception and design WGL, PR, DJR. Drafting manuscript PR. Critical revision of the manuscript for important intellectual content WGL, DJR. Supervision WGL, DJR.

COMPETING INTERESTS

The authors declare no competing interests.

ADDITIONAL INFORMATION

Correspondence and requests for materials should be addressed to Wai Gin Lee.

Reprints and permission information is available at <http://www.nature.com/reprints>

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

© The Author(s) 2023