

Penile Replantation after Self-Amputation Following Psilocybin-Induced Drug Psychosis

Andreas P Berger* and Alfred Hobisch

Department of Urology, Academic Teaching Hospital Feldkirch, Austria

***Corresponding author:** Andreas P. Berger, Department of Urology, Academic Teaching Hospital Feldkirch, Carinagasse 47, A-6800 Feldkirch, Austria, Tel: 4355223032800

Abstract

Penile self-amputation is a rare emergency that requires immediate replantation. Drug-induced psychosis has been described as a potential trigger for self-mutilation, including male genital amputation. We report the first psilocybin-triggered self-inflicted penile amputation with subsequent replantation. We present a case of a 37-year-old Caucasian man who consumed four or five dried magic mushrooms while staying alone in a holiday residence during an episode of depression. Under the influence of psilocybin, he decided to amputate his penis with a blunt axe, chopping the penile shaft into several pieces. The penile fragments were rescued in a jar but were contaminated with soil and dirty snow. The patient suffered considerable blood loss but was able to ligate the penile stump with a 5-mm cord. After an

approximate warm ischemia time of about 5 hours and a cold ischemia time of 4 hours, the patient reached the hospital. The penile fragments were disinfected and debrided, and approximately 5 cm of the penile shaft, which had been chopped into pieces, had to be resected. The glans penis and 2 cm of the penile shaft were replanted macroscopically. Due to prolonged psychotic symptoms postoperatively, the patient had to be transferred to the Intensive Care Unit for sedation. The glans and the urethral anastomosis healed well; however, the patient developed a coronal hypospadias. Four months postoperatively, the patient has a good urinary stream and erections. Psilocybin-induced psychosis led to self-mutilation with amputation of the penis and traumatic destruction of a great part of the penile shaft. Macroscopic replantation is a therapeutic

option to preserve the organ for voiding and sexual function despite relevant ischemia time. Besides the surgical treatment, intensive psychiatric care and wound management were crucial factors.

Keywords: Amputation; Penis; Drug-induced Psychosis; Urology

Introduction

Psilocybin is a psychedelic drug produced by fungi that can cause hallucinations and euphoric sensations. Psilocybin therapy has been tested successfully in patients with major depressive disorder [1]. However, aside from its therapeutic effects, in patients consuming high doses of psilocybin, experiences of fear and paranoia have been reported in up to 31% and 17%, respectively [2]. Penile self-amputation has been reported as a rare consequence of drug-induced psychosis. To our knowledge, no reports exist about genital self-mutilation after psilocybin abuse, although the tryptamine-derived psychoactive alkaloid has been described to potentially induce psychotic symptoms in healthy people. We report a case of complete penile amputation with an axe after the consumption of high doses of psilocybin with subsequent penile replantation.

Case Presentation

A 37-year-old Caucasian man with a history of depression under medical treatment and occasional excessive alcohol abuse consumed four or five dried magic mushrooms containing psilocybin around 9 p.m. while staying alone in a solitary holiday residence. He then chopped the penile shaft into four pieces with an axe. The most proximal cut completely separated the specimen from the body at the level of the penile base, whereas the segments of the corpora cavernosa and the corpus spongiosum

were completely separated but adherent to the penile skin of the free amputated limb. The trauma corresponds to a Grade V penile trauma according to the American Association for the Surgery of Trauma (AAST). Although the patient does not clearly remember the incident, he ligated the skin covering the penile stump but not the stump itself. The patient put the penile fragment, which was contaminated with soil and dirty snow, in a jar and left the house seeking help. He was found in a confused condition by a passerby who noticed strong bleeding and brought the man to the next village. From there, he was transferred to our hospital by ambulance at 2 a.m. the following day. Due to active bleeding, the patient was immediately transferred to the operating room, where he received tetanus prophylaxis and intravenous antibiotics (3 g of ampicillin and sulbactam twice daily). At that time, the patient was hemodynamically unstable and did not adequately respond to questions. Urologic examination showed an impressive bulging over the penile stump, and after removing the ligating cord, 800 ml of blood and clots discharged from the wound. After medical support with catecholamines, the patient's condition improved, and bleeding was controlled. The distal amputated penile fragment was macroscopically cleaned from soil and snow and then disinfected in povidone-iodine solution. The amputated fragment was fragile, and the proximal three fragments of the penile shaft, with a total length of 5 cm, had to be removed, but the glans and about two centimeters of the penile shaft seemed to be intact, so after debridement and cleaning of both stumps, a primary macroscopic replantation was performed after a warm ischemia time of about 5 hours and a cold ischemia time of 4 hours. The spatulated urethra was anastomosed with interrupted absorbable polyglactin

5.0 sutures. After inserting an 18 French Foley catheter, the corpus spongiosum was re-anastomosed with absorbable polyglactin 4.0, as well as the septum and both corpora cavernosa. After the closure of Buck's and Dartos fascia, the scrotal skin was approximated to the refreshed skin of the amputated fragment. Postoperatively, the patient received daily anticoagulant medication (enoxaparin 40 mg and acetylsalicylic acid 100 mg) for three weeks. After surgery, the patient was transferred to the ward; however, his mental status continued to show psychotic symptoms, as diagnosed by a psychiatrist. Despite antipsychotic medication (1 mg of risperidone three times per day, 10 mg of aripiprazole once daily), the patient continued to experience auditory hallucinations and made several attempts to leave the ward on postoperative day one, which led to his eventual transfer to the Intensive Care Unit. Surgical dressings were changed twice daily after sitz baths, and with ongoing antipsychotic medication, the

psychotic symptoms, such as religious delusions and auditory hallucinations, subsided, and the patient was transferred back to the department of urology. After one week, superficial skin necrosis occurred on the glans; however, Doppler sonography performed every other day clearly demonstrated arterial perfusion of the glans. After several weeks, all necrosis healed; however, coronal hypospadias developed, likely due to decreased perfusion and the presence of the 18 French Foley catheter. After removal of the catheter, the patient was able to void without problems in a sitting position. Despite significant contamination of the glans, no wound infection occurred. Three months after surgery, the patient reported erections; however, the patient was not sexually active at the time of the last visit fifteen weeks after surgery. Due to insurance reasons, his further medical care is being continued in his hometown abroad (Figure 1-4).

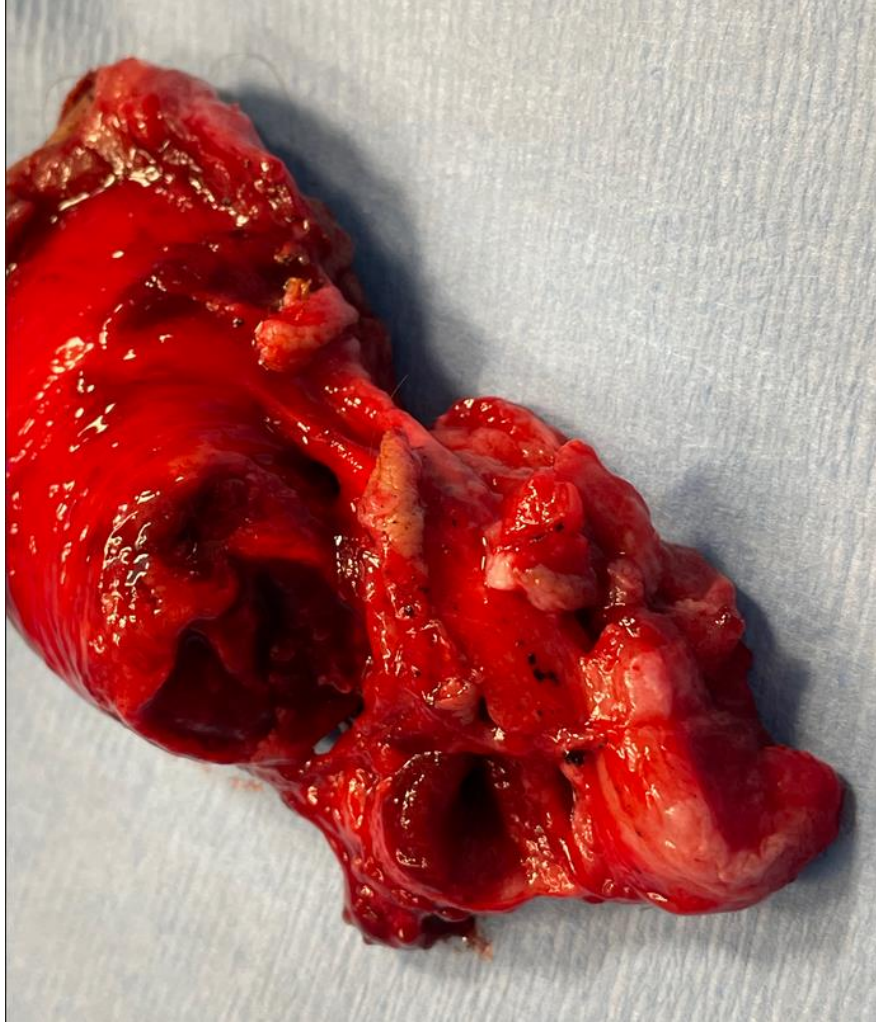


Figure 1: Penile amputation after disinfection and removal of two segments of destroyed penile shaft – the two proximal pieces on the right side ultimately had to be removed as well, leaving the glans penis and approximately 2 cm of the penile shaft for replantation.

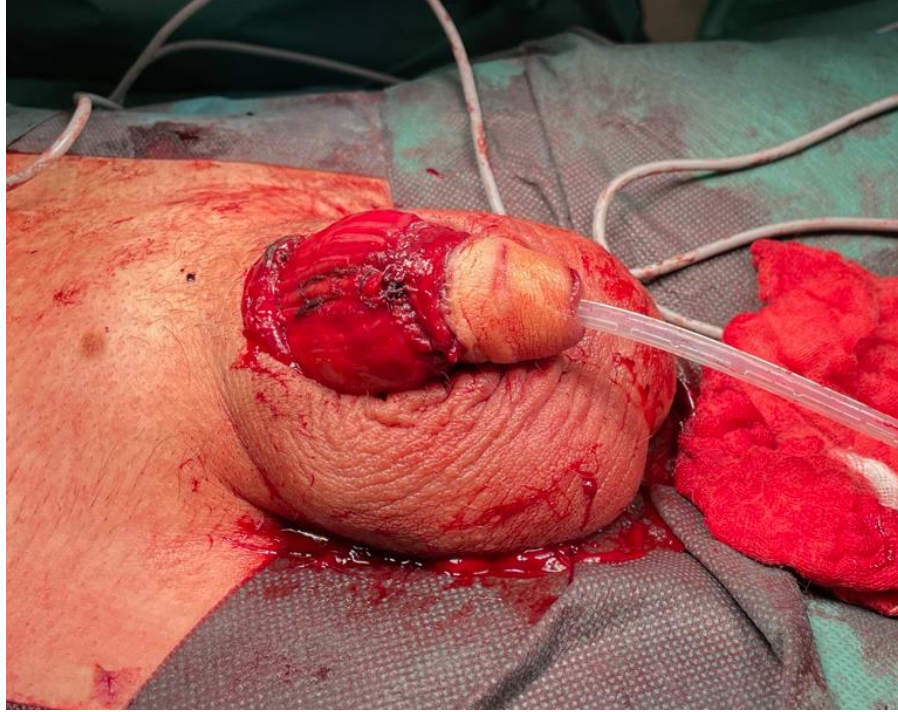


Figure 2: Situs after replanting the glans penis and approximately 2 cm of the penile shaft.

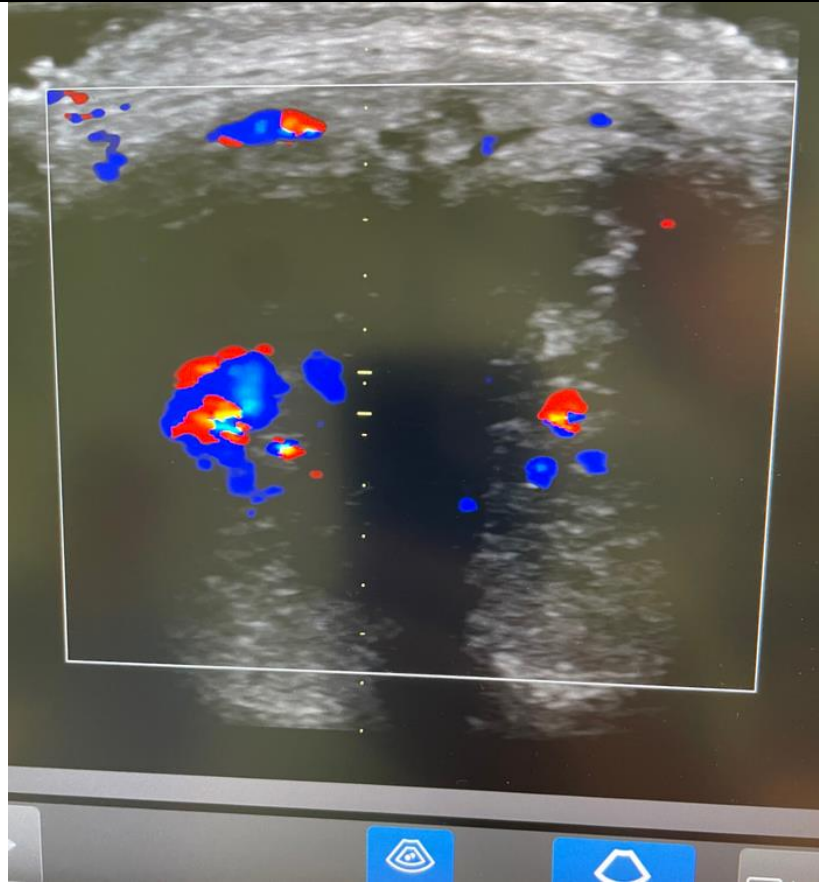


Figure 3: Doppler signal of the corpora cavernosa (post-op day 7): right corpus cavernosum shows better perfusion than the left corpus cavernosum.



Figure 4: Appearance of the penile stump 12 weeks after replantation.

Discussion

Self-inflicted traumatic penile amputation is a dramatic event with significant consequences for voiding, sexual function, and psychological well-being. In most cases, this rare trauma – also known as Klingsor syndrome [3] - is associated with psychiatric patients and has a considerable impact on the patient's quality of life. To our knowledge, this is the first report of psilocybin-induced penile

amputation with subsequent macroscopic replantation. The diagnosis of psilocybin-induced psychosis was made by a psychiatrist who monitored the patient throughout the hospital stay. Psilocybin exposure was confirmed by a positive urine immunoassay test. There were no indications of further substance abuse, although the patient reported a history of excessive alcohol abuse. However, alcohol tests were negative at the time of admission.

This rare urologic emergency required immediate surgical treatment. The patient was hemodynamically unstable upon admission, with potentially life-threatening bleeding, which was easy to control, as is common in such cases. Due to the lack of literature and limited experience, no standardized surgical procedure or guidelines for replantation exist. After hemodynamic stabilization, microscopic anastomosis of the dorsal vein and artery, as well as nerves, seems to be the preferred surgical technique today [4,5]. However, non-microsurgical replantation is also a therapeutic option, though with slightly higher rates of urethral strictures [5]. Reports describe successful macroscopic replantation with good cosmetic and functional results, including the maintenance of erectile function [6]. Both techniques have shown varying results in the literature [7], and the value of multiple microsurgical techniques remains uncertain [5], as no statistically convincing evidence is available [8]. However, if possible and the ischemia time is short, microsurgical replantation should be preferred. To date, more than 70% of all reported cases have been replanted macroscopically [9]. Penile replantation is challenging, and only 37.5% of penile amputations result in successful replantation [4,10]. In the present case, the completely amputated distal penile stump was cut into several pieces, and the dismembered organ was in poor condition due to severe hits with a blunt axe and significant contamination. The patient placed the amputated part in a jar full of snow, which likely helped to cool and preserve it. Hypothermic preservation of an amputated limb is crucial, but the penile stump must not come into direct contact with snow or ice, as was the case with our patient [11]. Due to prolonged ischemia time and the need for extensive debridement, an immediate macroscopic replantation

was performed after disinfecting the amputated fragment and trimming the surgical specimen. There is little data on the ischemia time of amputated penile stumps and the therapeutic window for replantation, but there is no doubt that ischemic time is a crucial prognostic factor for successful surgery. Replantation should be performed within at least 24 hours of amputation [12]. Glans replantations should be performed within eight hours, if possible [9,13], and Shukla recommends cutoff points of 4 and 16 hours for warm and cold ischemia, respectively [14].

One week after surgery, superficial necrosis of the glans occurred, which completely resolved over about six weeks. Skin necrosis has been reported to occur in up to 78% of cases with no clear correlation to vascular repair [15,16]. However, necrosis seems to be more common in macroscopic replantation, despite good later cosmetic and functional results [17]. Daily disinfection with povidone-iodine and bacitracin ointment was performed over six weeks to avoid infection of the free transplant. Laboratory tests were obtained regularly, and besides a slightly elevated C-reactive protein (2.6 mg/dl) in the perioperative period, no signs of infection occurred. A major problem in the initial postoperative period was persistent and ongoing psychotic symptoms with repeated hallucinations and religious preoccupations, typically of Klingsor syndrome [18]. In our patient, this was likely due to uncontrolled repeated intoxication with psilocybin on the urologic ward soon after surgery. Several magic mushrooms were found in the patient's bedside table and cupboard. The half-life of psilocybin is only about 30 minutes [19], so its effects should be negligible after several hours. Due to the patient's assumed noncompliance, he was transferred to the Intensive Care Unit on postoperative day one. After sedation for another 24

hours, the psychotic symptoms subsided. However, daily psychiatric supervision and medication were crucial in this case. From the time when the patient received regular psychiatric medication, no further compliance problems occurred, significantly contributing to successful treatment. It is important to recognize the increased likelihood of subsequent mutilation, as the psychiatric pathology may persist [20]. Therefore, permanent psychiatric support is mandatory for these patients. After a follow-up of several weeks, the patient could void without signs of stricture and reported penile erections beginning about six to eight weeks after replantation. Achievement of erection is remarkable due to the extent of destruction of the penis, but maintenance of erections has been reported after macroscopic replantation [6]. However, due to the loss of about 5 cm of the penile shaft from self-inflicted damage, penile length was clearly shorter than prior to the trauma. The urethra was calibrated postoperatively and showed a diameter of at least 16 French. Due to glandular hypospadias, the patient had to void in a sitting position. During surgery, the scrotal skin was fixed to the trimmed prepuce of the dismembered organ to close the wound. From a urologic perspective, it was planned to later circumcise the penis about two cm proximal to the sulcus coronarius and interpose a three cm split-skin graft to gain more visible penile shaft length. However, the patient is currently satisfied with the present situation and does not wish for further surgery at this time. Due to lack of protocols on how to handle this rare entity, reporting these cases is important to gain experience. Relevant outcome parameters to report include the survival of the organ, occurrence of skin necrosis and infection, stricture rate of the urethra, and maintenance of erections [8].

Conclusion

This unusual case reports the first complete proximal self-amputation of the penis caused by psilocybin-induced psychosis and shows that immediate replantation, even of a significantly destroyed and contaminated amputate after an ischemia time of at least 9 hours, can lead to an acceptable cosmetic and functional result. In such cases, a multidisciplinary team approach involving urology, psychiatry, and the Intensive Care Unit is crucial and a key aspect of treatment.

References

1. [Davis AK, Barrett FS, May DG, et al. Effects of Psilocybin-Assisted Therapy on Major Depressive Disorder: A Randomized Clinical Trial. JAMA Psychiatry. 2021;78:481-9.](#)
2. [Van Amsterdam J, Opperhuizen A, van den Brink W. Harm potential of magic mushroom use: A review. Regul Toxicol Pharmacol. 2011;59\(3\):423-9.](#)
3. [Aggarwal G, Adhikary SD. Klingsor syndrome: A rare surgical emergency. Ulus Travma Acil Cerrahi Derg. 2017;23\(5\):427-9.](#)
4. [El Harrech Y, Abaka N, Ghoundale O, et al. Genital self-amputation or the Klingsor syndrome: Successful non-microsurgical penile replantation. Urol Ann. 2013;5\(4\):305-8.](#)
5. [Babaei AR, Safarinejad MR. Penile replantation, science or myth? A systematic review. Urol J. 2007;2:62-5.](#)
6. [Syahrir S, Palinrungi MA, Hkolis K, et al. Partial penile amputation due to Klingsor](#)

- [syndrome: A case report with successful macroscopic reconstruction. Int J Surg Case Rep. 2020;77:387-391.](#)
7. [Mensah JE, Bray LD, Akpakli MY, et al. Successful penile reimplantation and systematic of world literature. Afr J Urol. 2017;23:253-7.](#)
 8. [Krishnakumar KS, Petkar KS, Lateef S, et al. Penile replantation. Indian J Plast Surg. 2013;46:143-6.](#)
 9. [Kim JH, Park JY, Song YS. Traumatic Penile Injury: From Circumcision Injury to Penile Amputation. Biomed Res Int. 2014;375285.](#)
 10. [Selby EA, Bender TW, Gordon KH, et al. Non-suicidal self-injury \(NSSI\) disorder: a preliminary study. Personal Disord. 2012;3:167-75.](#)
 11. [Serafetinidis E, Campos-Juanatey F, Hallscheidt P, et al. Summary Paper of the Updated 2023 European Association of Urology Guidelines on Urological Trauma. Eur Urol Focus. 2023;23:S2405-4569.](#)
 12. [Virasoro R, Tonkin JB, McCammon KA, et al. Penile Amputation: Cosmetic and Functional Results. Sex Med Rev. 2015;3:214-22.](#)
 13. [Sherman J, Borer JG, Horowitz M, et al. Circumcision: successful glanular reconstruction and survival following traumatic amputation. J Urol. 1996;156:842-4.](#)
 14. [Shukla CJ, Brown G, Dorking T, et al. British Association of Urological Surgeons \(BAUS\) consensus document for the management of male genital emergencies – penile amputation. BJU Int. 2018;121:699-702.](#)
 15. [Morrison SD, Shakir A, Vyas KS, et al. Penile Replantation: A Retrospective Analysis of Outcomes and Complications. J Reconstr Microsurg. 2017;33:227-32.](#)
 16. [Veeramani A, Hwang CD, Gardenier JC, et al. Posttraumatic Penile Replantation with Minimal Skin Necrosis. Plast Reconstr Surg Glob Open. 2023;11:e5205.](#)
 17. [Facio FN, Spessoto LC, Arruda P, et al. Penile Replantation After Five Hours of Warm Ischemia. Urol Case Rep. 2015;23:77-9.](#)
 18. [Stunell H, Power RE, Floyd M, et al. Genital self-mutilation. Int J Urol. 2006;13:1358-60.](#)
 19. [Jones NT, Wagner L, Hahn MCP, et al. In vivo validation of psilocetin as a prodrug yielding modestly lower peripheral psilocin exposure than psilocybin. Front Psychiatry. 2024;14:1303365.](#)
 20. [Sanger JR, Matloub HS, Yousif NJ, et al. Penile replantation after self-inflicted amputation. Ann Plast Surg. 1992;29:579-84.](#)

Citation of this Article

Berger AP and Hobisch A. Penile Replantation after Self-Amputation Following Psilocybin-Induced Drug Psychosis. *Mega J Surg.* 2024;7(9):2001-2011.

Copyright

©2024 Berger AP. This is an Open Access Journal Article Published under [Attribution-Share Alike CC BY-SA](#): Creative Commons Attribution-Share Alike 4.0 International License. With this license, readers can share, distribute, and download, even commercially, as long as the original source is properly cited.