

World Journal of *Clinical Cases*

World J Clin Cases 2023 August 6; 11(22): 5193-5415



MINIREVIEWS

- 5193 Research progress on reactive oxygen species production mechanisms in tumor sonodynamic therapy
Dong HQ, Fu XF, Wang MY, Zhu J

ORIGINAL ARTICLE**Retrospective Study**

- 5204 Combining the age-male-albumin-bilirubin-platelets score and shear wave elastography stratifies carcinogenic risk in hepatitis C patients after viral clearance
Masaoka R, Gyotoku Y, Shirahashi R, Suda T, Tamano M
- 5215 Changes in neurotransmitter levels, brain structural characteristics, and their correlation with PANSS scores in patients with first-episode schizophrenia
Xu XJ, Liu TL, He L, Pu B
- 5224 Five-year outcomes of immediate implant placement for mandibular molars with and without chronic apical periodontitis: A retrospective study
Yang H, Luo D, Yuan MJ, Yang JJ, Wang DS

Observational Study

- 5236 Standardization of apple cancellation test for neglect patients in Korea: An observational study
Jang WH, Jang JS

Prospective Study

- 5244 Diabetic neuropathy results in vasomotor dysfunction of medium sized peripheral arteries
Ege F, Kazci Ö, Aydin S

SYSTEMATIC REVIEWS

- 5252 COVID-19-induced gastrointestinal autonomic dysfunction: A systematic review
Elbeltagi R, Al-Beltagi M, Saeed NK, Bediwy AS

META-ANALYSIS

- 5273 Meta-analysis of outcomes from drug-eluting stent implantation in infrapopliteal arteries
Li MX, Tu HX, Yin MC

CASE REPORT

- 5288 Acute hepatitis of unknown etiology in an adult female: A case report
Dass L, Pacia AMM, Hamidi M

- 5296** Zimberelimab plus chemotherapy as the first-line treatment of malignant peritoneal mesothelioma: A case report and review of literature
Peng XD, You ZY, He LX, Deng Q
- 5303** Recurrent ventricular arrhythmia due to aconite intoxication successfully treated with landiolol: A case report
Matsuo C, Yamamoto K, Fukushima H, Yajima D, Inoue H
- 5309** Anti-phospholipase A2 receptor-associated membranous nephropathy with human immunodeficiency virus infection treated with telitacicept: A case report
Wang JL, Sun YL, Kang Z, Zhang SK, Yu CX, Zhang W, Xie H, Lin HL
- 5316** Rapid progression of heart failure secondary to radioactive iodine treatment of hyperthyroidism: A case report
Li ZH, Ni LJ, Liu YQ, Si DY
- 5322** Pathological complete response to neoadjuvant alectinib in unresectable anaplastic lymphoma kinase positive non-small cell lung cancer: A case report
Wang LM, Zhao P, Sun XQ, Yan F, Guo Q
- 5329** Hepatoid adenocarcinoma of the stomach with neuroendocrine differentiation: A case report and review of literature
Fei H, Li ZF, Chen YT, Zhao DB
- 5338** Acquired haemophilia as a complicating factor in treatment of non-muscle invasive bladder cancer: A case report
Ryšánková K, Gumulec J, Grepl M, Krhut J
- 5344** Persistent dysexecutive syndrome after pneumococcal meningitis complicated by recurrent ischemic strokes: A case report
Abbruzzese L, Martinelli G, Salti G, Basagni B, Damora A, Scarselli C, Peppoloni G, Podgorska A, Rosso G, Bacci M, Alfano AR, MANCUSO M
- 5351** Treatment of refractory anti-melanoma differentiation-associated gene 5 antibody-positive dermatomyositis complicated by rapidly progressing interstitial pulmonary disease: Two case reports
Wang QH, Chen LH
- 5358** TINAVI robot-assisted one-stage anteroposterior surgery in lateral position for severe thoracolumbar fracture dislocation: A case report
Ye S, Chen YZ, Zhong LJ, Yu CZ, Zhang HK, Hong Y
- 5365** Individual with concurrent chest wall tuberculosis and triple-negative essential thrombocythemia: A case report
Xu XY, Yang YB, Yuan J, Zhang XX, Kang L, Ma XS, Yang J
- 5373** Self-strangulation induced penile partial amputation: A case report
Maimaitiming ABLT, Mulati YLSD, Apizi ART, Li XD
- 5382** Long-term rare giant sialolithiasis for 30 years: A case report and review of literature
Mao JS, Lee YC, Chi JCY, Yi WL, Tsou YA, Lin CD, Tai CJ, Shih LC

- 5391** Kawasaki disease with peritonsillar abscess as the first symptom: A case report
Huo LM, Li LM, Peng HY, Wang LJ, Feng ZY
- 5398** Treatment of a patient with severe lactic acidosis and multiple organ failure due to mitochondrial myopathy: A case report
Chen L, Shuai TK, Gao YW, Li M, Fang PZ, Christian W, Liu LP
- 5407** Early esophageal carcinomas in achalasia patient after endoscopic submucosal dissection combined with peroral endoscopic myotomy: A case report
An BQ, Wang CX, Zhang HY, Fu JD

LETTER TO THE EDITOR

- 5412** Caution in the use of sedation and endomyocardial biopsy for the management of pediatric acute heart failure caused by endocardial fibroelastosis
Xin XX, Se YY

ABOUT COVER

Editorial Board Member of *World Journal of Clinical Cases*, Etienne Andrade Munhoz, PhD, Associate Professor, Department of Dentistry, Health Science Centre, Federal University of Santa Catarina, Florianopolis 88040-379, Brazil. etiamfob@yahoo.com

AIMS AND SCOPE

The primary aim of *World Journal of Clinical Cases* (*WJCC*, *World J Clin Cases*) is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

INDEXING/ABSTRACTING

The *WJCC* is now abstracted and indexed in Science Citation Index Expanded (SCIE, also known as SciSearch®), Journal Citation Reports/Science Edition, Current Contents®/Clinical Medicine, PubMed, PubMed Central, Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database. The 2023 Edition of Journal Citation Reports® cites the 2022 impact factor (IF) for *WJCC* as 1.1; IF without journal self cites: 1.1; 5-year IF: 1.3; Journal Citation Indicator: 0.26; Ranking: 133 among 167 journals in medicine, general and internal; and Quartile category: Q4.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: *Si Zhao*; Production Department Director: *Xu Guo*; Editorial Office Director: *Jin-Lei Wang*.

NAME OF JOURNAL

World Journal of Clinical Cases

ISSN

ISSN 2307-8960 (online)

LAUNCH DATE

April 16, 2013

FREQUENCY

Thrice Monthly

EDITORS-IN-CHIEF

Bao-Gan Peng, Jerzy Tadeusz Chudek, George Kontogeorgos, Maurizio Serati, Ja Hyeon Ku

EDITORIAL BOARD MEMBERS

<https://www.wjgnet.com/2307-8960/editorialboard.htm>

PUBLICATION DATE

August 6, 2023

COPYRIGHT

© 2023 Baishideng Publishing Group Inc

INSTRUCTIONS TO AUTHORS

<https://www.wjgnet.com/bpg/gerinfo/204>

GUIDELINES FOR ETHICS DOCUMENTS

<https://www.wjgnet.com/bpg/GerInfo/287>

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

<https://www.wjgnet.com/bpg/gerinfo/240>

PUBLICATION ETHICS

<https://www.wjgnet.com/bpg/GerInfo/288>

PUBLICATION MISCONDUCT

<https://www.wjgnet.com/bpg/gerinfo/208>

ARTICLE PROCESSING CHARGE

<https://www.wjgnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjgnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>



Self-strangulation induced penile partial amputation: A case report

A-Bu-Lai-Ti Maimaitiming, Ye-Li-Su-Dan Mulati, Ai-Re-Ti Apizi, Xiao-Dong Li

Specialty type: Medicine, research and experimental

Provenance and peer review:

Unsolicited article; Externally peer reviewed.

Peer-review model: Single blind

Peer-review report's scientific quality classification

Grade A (Excellent): 0
Grade B (Very good): B
Grade C (Good): C
Grade D (Fair): D
Grade E (Poor): 0

P-Reviewer: Othmen MB, Tunisia; Sarier M, Turkey; Surani S, United States

Received: April 26, 2023

Peer-review started: April 26, 2023

First decision: June 12, 2023

Revised: June 20, 2023

Accepted: July 17, 2023

Article in press: July 17, 2023

Published online: August 6, 2023



A-Bu-Lai-Ti Maimaitiming, Ye-Li-Su-Dan Mulati, Ai-Re-Ti Apizi, Xiao-Dong Li, Department of Urology, The First Affiliated Hospital of Xinjiang Medical University, Xinjiang Clinical Research Center for Genitourinary System, Urumqi 830011, Xinjiang Uygur Autonomous Region, China

Corresponding author: Xiao-Dong Li, MD, Associate Chief Physician, Department of Urology, The First Affiliated Hospital of Xinjiang Medical University, Xinjiang Clinical Research Center for Genitourinary System, No. 137 Liyushan South Road, Urumqi 830011, Xinjiang Uygur Autonomous Region, China. lx705@163.com

Abstract

BACKGROUND

Traumatic amputation of the penis is a rare surgical emergency, usually caused by self-mutilation, accidents, circumcision, assault and animal attacks. This study aimed to summarize our treatment experience involving penile reconstruction in a rare case of a self-strangulation induced chronic partial penile amputation.

CASE SUMMARY

A 22-year-old man presented with self-strangulation induced chronic partial penile amputation for 3 mo where the penile proximal part was 1 cm far from the pubis. Reconstruction methods included end-to-end anastomosis of the urethral mucosa, proximal anastomosis of the corpus cavernosum and tunica albuginea of the penis, anastomosis of the deep dorsal vein, dorsal artery, and superficial dorsal vein. Patient urinated smoothly after the catheter was removed on day 21. 3 mo after the surgery, the patient's penile preliminary cosmetic appearance was satisfactory, with occasional morning erections. Distal penile sensation was preserved, yet erection hardness of the distal penis was not satisfactory.

CONCLUSION

Complete preoperative assessment and prompt surgical intervention decreases loss of residual penile functions.

Key Words: Amputation; Reconstruction; Body dysmorphic disorders; Psychological treatment; Case report

©The Author(s) 2023. Published by Baishideng Publishing Group Inc. All rights reserved.

Core Tip: We report a rare case of penile partial amputation. Through complete preoperative evaluation and appropriate surgical management, the patient's penile urination and erectile function were preserved. At the same time, the importance of psychological intervention on the rehabilitation of patients with self-injury was further discussed.

Citation: Maimaitiming ABLT, Mulati YLSD, Apizi ART, Li XD. Self-strangulation induced penile partial amputation: A case report. *World J Clin Cases* 2023; 11(22): 5373-5381

URL: <https://www.wjgnet.com/2307-8960/full/v11/i22/5373.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v11.i22.5373>

INTRODUCTION

Traumatic amputation of the penis is a rare surgical emergency, usually caused by self-mutilation, accidents, circumcision, assault and animal attacks[1]. Penile self-mutilation is even rarer than related to mental and mood disorders and is reported sporadically. Treatment of penile amputation requires stabilization of the patient and special attention to underlying psychiatric disorders. Therefore, for these patients, a detailed medical history should be taken to determine the patient's mental state in case for later intervention management if necessary. Studies have shown that in most cases of self-amputation, resolution and treatment of psychiatric disorders usually results in a strong desire to preserve the penis. Studies have shown that, in most cases of self-amputation, resolution and treatment of mental illness usually results in a strong desire to preserve the penis[2].

Penile amputation as a surgical emergency does not require imaging most of the time[3]. Patients often undergo surgery directly for emergencies, such as edema, swelling, cyanosis, severe pain caused by acute ischemia of the distal penis. In severe cases, the patient may even lose the penis permanently. However, the patient in our case delayed the golden time of treatment due to personal reasons. Under this situation, adequate preoperative imaging evaluation, including penis flow ultrasound, penis nerve electrophysiology and urethroscopy evaluation, will greatly help the success rate of reconstruction, the recovery of urinary and erectile function.

CASE PRESENTATION

Chief complaints

A 22-year-old unmarried patient complained of "repeatedly tying his penis with rubber bands for more than 3 mo" and was admitted to the andrology ward of the Urology Department of the First Affiliated Hospital of Xinjiang Medical University.

History of present illness

Patient's penis was partial amputated with a residue connection about 1 cm in diameter and leaks urine at the tied shaft.

History of past illness

The patient stated he started to tie his penis with rubber bands discontinuously 3 mo ago. The initial binding site is about 2-3 cm proximal to the coronal groove of the penis, which lasted for about one week resulting in a defect of about 1 cm deep in the first strangulation ring so the patient released the tying rubber bands temporarily. One week later, the patient rebind the penis, which worsened her condition.

Personal and family history

The patient denied any family history of psychiatric illness. No autism-like manifestations were found during a consultation with a psychologist.

Physical examination

On genital examination, partial connections remained in the proximal penis was observed (Figure 1). Postoperative follow-up showed that the penile wound was in good condition, the appearance was satisfactory, patient's urination and erectile function were recovered (Figure 2).

Laboratory examinations

The patient's laboratory test results reveal no notable abnormalities.

Imaging examinations

Color Doppler ultrasonography indicated that bilateral corpus cavernosum and corpus spongiosum were severed near the root of the penis; there is blood flow distribution in part of the cortex of the severed penis; part of the penile fascia at the part of the severed penile fascia is still continuous, and blood flow is seen in the continuous fascia, but no obvious



DOI: 10.12998/wjcc.v11.i22.5373 Copyright ©The Author(s) 2023.

Figure 1 Preoperative physical examination. The clinical presentation depicts a traumatic partial amputation on the proximal penile shaft with only a partial residual connection between the proximal and distal ends of the penis. The image shows the first tourniquet indicated by the black arrow, the second tourniquet indicated by the white arrow, and the proximal opening of the disconnected urethra indicated by the yellow arrow.

blood flow signal was found in the severed corpus cavernosum and corpus spongiosum (Figure 3).

Flexible cystoscopy (Video 1): Using a flexible cystoscope to enter the urethra, a circular stenosis can be seen in the urethra about 8 cm away from the external urethral orifice where the flexible cystoscope cannot pass through. Meanwhile, the flexible cystoscope guide light can be seen outside the second strangulation ring.

FINAL DIAGNOSIS

The patient was finally diagnosed with strangulation induced penile partial amputation.

TREATMENT

Considering that the patient's distal penile blood supply was still residual, replantation might maintain good blood perfusion, we decided to perform penile replantation surgery with the core goal of maximizing the preservation of the patient's long-term urination and erectile function for the patient. The surgery was performed under general anesthesia by two urologists who were skilled in penile reconstruction surgery.

Preoperative observations: The penis was seen to be semi-disconnected at the root, the penile corpus cavernosum and urethral sponge were disconnected, the disconnected stump had skin attached, and the urethra was narrowed at both ends of the dissection. The residual connecting tissues were hard in texture and the thinnest diameter was about 7 mm, and ultrasound confirmed that there was a small amount of arterial blood flow signal inside the area. The arterial flow signal decreased after twisting the penis. A slight strangulation of the penile body was seen 2 cm from the external urethra, the distal penile skin temperature was low, and the original skin recovered red slowly after pressing the glans, which was considered to be in an ischemic state.

Surgical procedure: Adequate preoperative disinfection of the surgical area was performed. Circumferentially incised the skin attached to the stump, freed the proximal urethra, excised the narrowed part of the urethra to fully expose the normal urethra. Same approach were used for the proximal dissection of the urethra and penile corpus cavernosum. Trabeculated epidermis at the site of the connecting tissue could be buried under the skin. Due to the dorsal neurovascular bundle of the penis was surrounded by the middle dorsal segment of Colles' fascia and tunica albuginea, and the surrounding tissue was relatively tough. In this case, it didn't get too much damaged, which being the reason there were still blood flow signal in the stump of the penis. After intermittently suturing the corpus cavernosum, mediastinum and



DOI: 10.12998/wjcc.v11.i22.5373 Copyright ©The Author(s) 2023.

Figure 2 Postoperative follow-ups. The image depicts the wound recovery status of patients at 3 d, 14 d, and 3 mo after surgical treatment. A: 3 d; B: 14 d; C: 3 mo.

urethra with absorbable suture, a urinary catheter was placed, and the skin at both ends was trimmed and anastomosed. The continuity of the penile corpus cavernosum and urethra was completely restored, and the appearance of the penis was restored (Figure 4).

OUTCOME AND FOLLOW-UP

The catheter was maintained for 21 d after surgery. Postoperative follow-ups are shown in Figure 3. Three months after reconstruction, the preliminary cosmetic appearance was satisfactory with occasional morning erection. Patient had a grade 3 erection according to The Erection Hardness Score after injected papaverine into the corpus cavernosum during the penile ultrasound examination (Figure 5). Pharmarco penile duplex color doppler ultrasonography assessment data 3 mo after surgery was shown in Table 1. The patient was satisfied with the restoration of reconstruction.

DISCUSSION

Penile amputation is a rare and challenging injury, like other traumatic penile injuries including penile fracture, penetrating penile injuries and penile soft tissue injuries, it is considered as emergency[4]. But cases of chronic strangulated partial penile amputation have not been reported so far. This case report may be the first to be reported. To this end, we reviewed relevant literature to summarize key points and experiences in the treatment of acute penile trauma.

The most common complications after amputation penile reconstruction include skin necrosis, penile skin hypoesthesia, urethral stricture, erectile dysfunction, and urethral fistula[1]. Previous studies determined that immediate penile exploration and blood supply recovery are considered the most common and current management of penile amputation with experts demonstrating that it leads to the fastest recovery in erectile, urinary function and positive cosmetic outcomes[5]. Based on the summary of relevant literature and case reports, we conclude that amputation type, tissue defect area, ischemic time and urethral injury are factors that need to be evaluated before surgery. These have a

Table 1 Pharmarco penile duplex color doppler ultrasonography assessment data 3 mo after surgery (before, 5 min and 10 min after papaverine injection)

		Before injection	5 min after	10 min after
Corpus cavernosum (mm)	L	1.1	2	2
	R	1.1	1.9	1.9
Deep dorsal penile artery (mm)	L	0.4	1.2	1.2
	R	0.4	1.2	1.2
PSV (cm/s)	L	/	65	89.9
	R	/	56.3	64.8
EDV (cm/s)	L	/	-3.9	-6.7
	R	/	-4.3	-4.9
RI	L	/	-1.1	-1.1
	R	/	-1.1	-1.1

PSV: Peak systolic velocity; EDV: End diastolic velocity; RI: Resistance index.

significant impact on the success of penile replantation or reconstruction. It should be emphasized that a thorough physical examination should not delay surgical intervention, as better intraoperative examination can be achieved in the operating room.

Types of penile amputation include total and partial amputations. Although there are still tissue connections in partial penile amputation, the degree of tissue damage in partial penile amputation is sometimes more severe than that in total amputation. Morrison *et al*[6] concluded in their study that critically appraises the current literature on penile replantation that complete amputation seems to predict better sensory outcomes in bivariate analysis. Complete penile amputation may give the surgeon better access to nerves for neurorrhaphy, which ultimately could allow for better sensation. In particular, the asymmetry of the dissected tissue caused by strangulation will lead to poor postoperative anastomosis and affect the surgical effect. As for total penile amputation caused by neat cutting, the wound conditions will be easier to manage but also total amputation usually means more severe ischemia.

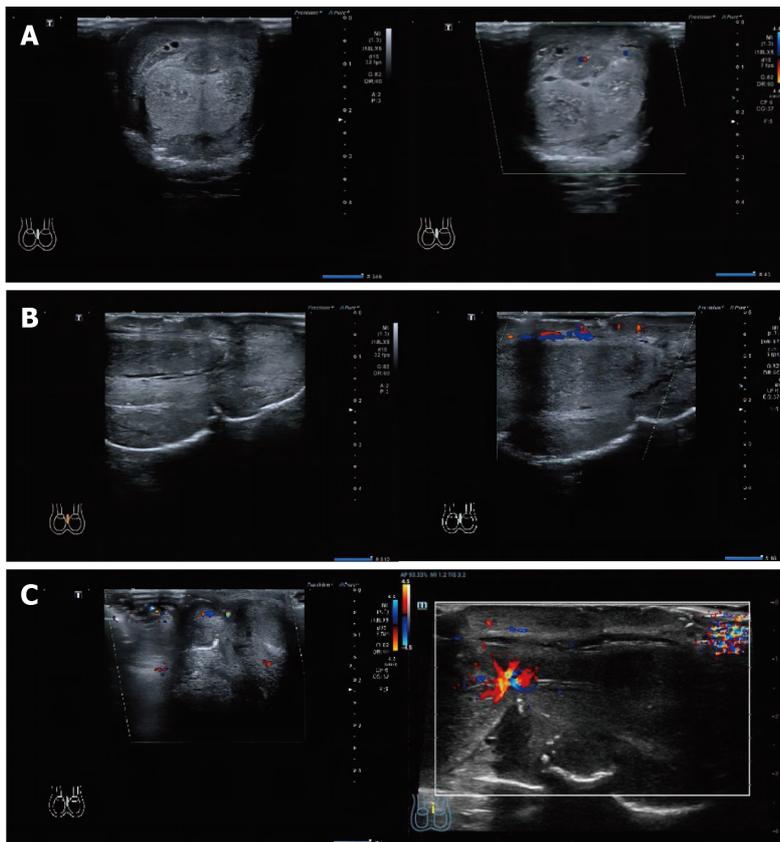
Facing cases with large tissue defects, in order to achieve the maximum restorative effect, local plastic correction is needed, which generally needs to be decided according to the patient's condition. Available choices include abdominal wall under the island flap, groin flap and other conditional flaps with less subcutaneous fat and no obvious variation in vascular distribution. Scrotal flaps are also used in a few cases. However, due to the large number of folds and pores of scrotal flaps, the filled defects often have poor appearance after repair and obvious scar remains.

The application of microsurgery downstream free flap transplantation makes the reconstruction and repair of penile injuries with large tissue defects more diversified. At present, various free skin flaps, such as radial free forearm flap, superficial inferior epigastric artery flap and superficial circumflex iliac artery flap, had been attempted for phallic construction, aiming at functional as well as cosmetic result[7].

According to reports in the literature, the survival rate was higher after replantation if the duration of warm ischemia was < 6 h, or the duration of cold ischemia was < 16 h for the amputated organs[8]. Previous studies suggested that total ischemic time of the penis below 15 h (mean 7 h) is associated with the successful outcome of the penile replantation. Henry *et al*[9] reported a successful case of penile reconstruction after 23 h of ischemia[9]. Although there is no unified standard for the golden time limit of ischemic time after penile amputation, the shorter the amputation time, the higher the success rate of replantation and reconstruction.

A consensus in the contemporary literature acknowledges that the microsurgical revascularization and approximation of the penile shaft structures provide early and adequate restoration of penile blood flow with the best outcome of penile replantation survival, erectile and voiding functions[10-12]. For cases with urethral injury, adequate intraoperative evaluation was performed to clarify the type of urethral penile injury, including partial and complete rupture. According to the treatment principle of anterior urethral injury, simple indwelling catheter and urethral repair were used respectively.

Retrograde urethrocytography (RGU) can detect contrast agent leakage at the site of occult urethral rupture. Some authors consider RGU to be compulsory if diagnosis of urethral rupture is suspected[13,14]. At the same time, RGU can also evaluate and diagnose the postoperative complications such as urethral fistula and urethral stricture.



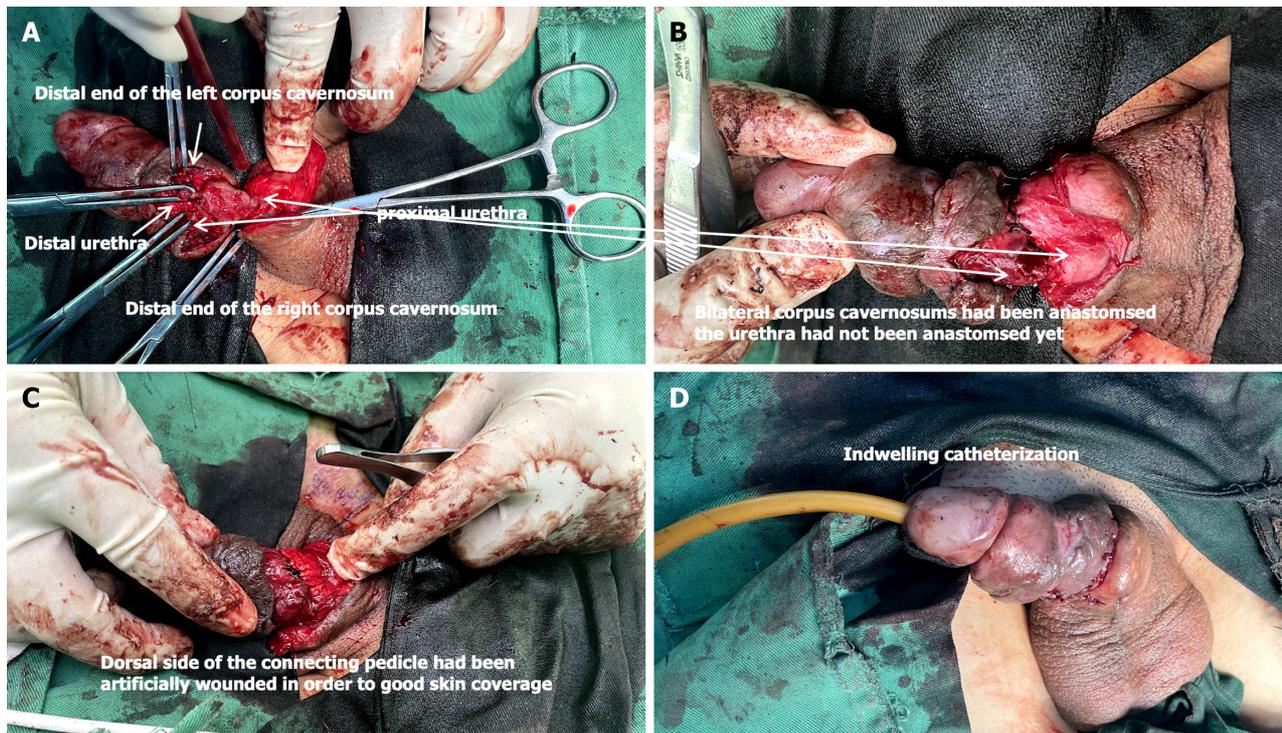
DOI: 10.12998/wjcc.v11.i22.5373 Copyright ©The Author(s) 2023.

Figure 3 Preoperative Doppler ultrasonography. The image depicts the color Doppler ultrasound display of the blood flow signal in the coronal and sagittal planes, as well as the strangulation site of the penis. A: Coronal plane; B: Vertical plane; C: Strangulation site.

Principles of penile reconstruction surgery are: Judiciously debride necrotic tissue, anastomose the severed urethra, repair the tunica albuginea and microsurgical repair for the dorsal nerves, arteries and veins[2,15-17]. Ottaiano *et al*[18] summarized in a review of the literature on reconstruction that immediate reconstruction of penile injuries typically occurs by means of suspension or entrapment can reduce complications[18]. Recent publications have investigated the anatomical approaches to penile allografts and suggested that connection of cavernosal, dorsal, and pudendal arteries would allow for optimal reperfusion[10,19].

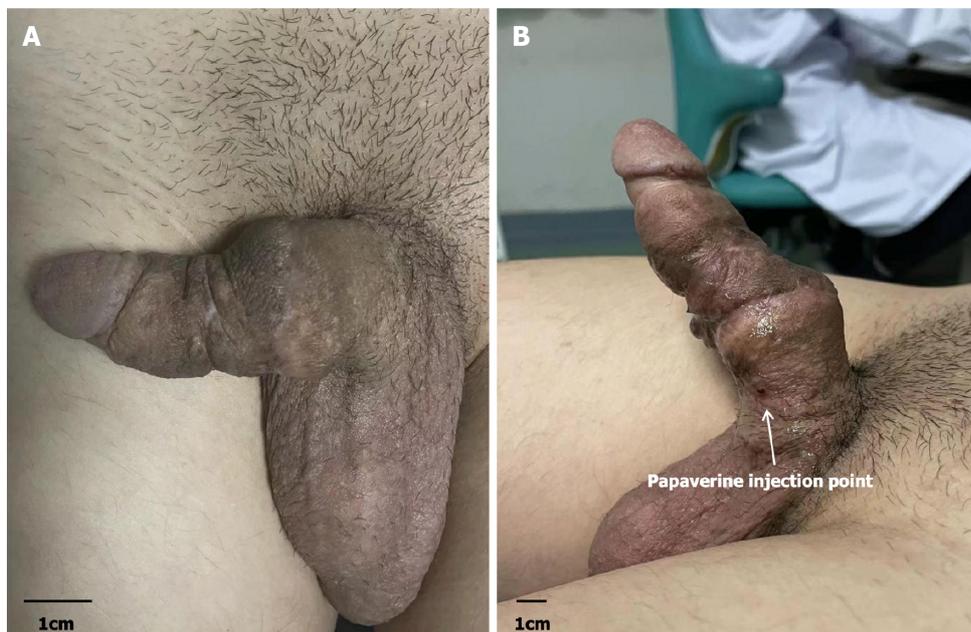
Previous studies have also suggested that microvascular repair yields superior outcomes, especially for venous outflow[20,21]. Babaei *et al*[22] summarized that although the initial reconstruction under direct vision had a good effect on the recovery of appearance and urination function in most cases, skin necrosis and other complications were also common. With the application of microscopic technology, reconstruction meeting higher and higher anatomical requirements, especially the microsurgical anastomosis of penile blood vessels and nerves, which reduces the risk of penile skin necrosis.

Besides corporeal sinusoidal blood flow and its venous outflow are two critical factors for successful survival of penile replantation. Some authors contend that the arteries do not provide a significant amount of vascular flow, add more operative time, and result in damage to the erectile tissue. However, studies showed that erectile function remains in up to 86%, penile sensation up to 82% of patients who undergo microvascular reanastomosis of the dorsal arteries, although this may be diminished when compared with preinjury state[23]. In Zhong *et al's* study, they also mentioned using hyperbaric oxygen to accelerate the healing process which was of particular interest[23]. Damage assessing of the arteries and veins along with microvascular reanastomosis are very helpful for the surgical outcomes and reducing complications. Multiple venous anastomoses help to reduce venous congestion. Superficial veins help to ensure skin vitality as well as the dorsal deep veins[24]. Morrison *et al*[6] reviewed 74 published articles related to this topic, and reported the outcomes and replantation-related complications in 106 cases. Complete penile amputation accounted for 74.8% of these men, most of whom recovered micturition (97.4%) and erectile functions (77.5%). Skin necrosis (54.8%) and venous thrombosis (20.2%) were the most common complications. Multivariate analysis indicated anastomosis of a great number of the dorsal arteries and nerves were associated with better sexual function and recovery of urination along with normal sensation. Moreover, the number of anastomosed vessels was negatively correlated with adverse outcomes. During the perioperative period, routine observations include penile skin color, filling, overall vitality, temperature, and capillary refilling time[9]. Arterial blood flow should be monitored using a hand-held Doppler device, and the observation time can be arranged according to the actual situation.



DOI: 10.12998/wjcc.v11.i22.5373 Copyright ©The Author(s) 2023.

Figure 4 Surgery procedure. Urethral anastomosis and reconstruction was performed. A: Adequately expose the pertinent anatomical structures of the surgical site; B: Approximate the severed corpus cavernosum of the penis; C: Implement local wound management to optimize skin coverage; D: Insertion of a urinary catheter.



DOI: 10.12998/wjcc.v11.i22.5373 Copyright ©The Author(s) 2023.

Figure 5 Postoperative pharmacological penile duplex color doppler ultrasonography 3 mo after surgery. A: Natural state; B: 5 min after papaverine injection.

Whether it is penile amputation caused by accidental injury or self-harm behavior, it is very important to evaluate the patient's psychological and mental health during the whole treatment cycle, as well as the necessary psychological intervention. Especially for patients presenting with self-harm behavior.

Currently, relevant surgical literatures have not paid special attention to the mental health of such patients. However, it is very common for patients with penile amputation to experience a series of stress reactions after the injury. According to the severity of the patient's condition, personality characteristics, education level and other aspects, the clinical

manifestations of this stress response are mild or severe, and psychological changes are common phenomena. In addition to negative emotions such as sadness and depression, increased psychological vigilance, avoidance, hyperactivity, anxiety, and impaired self-cognition may affect the treatment effect. In particular, the postoperative body image disorder makes the patient have an unacceptable aversion to the reconstructed and repaired penis, and extreme patients may self-harm again[25]. Therefore, helping patients to establish a positive concept of coping with stress and conducting corresponding psychological counseling in a timely manner are indispensable for patients who have undergone penile reconstruction surgery in receiving the reconstructed penis and physical and mental health recovery after surgery.

CONCLUSION

Penile amputation is a rare emergency in urology. It is necessary to evaluate the damage of the penis, and immediate surgical treatment is essential for the recovery of appearance, urination, and erectile function of the truncated penis[26-28]. Reconstruction should be performed to the greatest extent possible, although very few patients may face delays in the optimal timing of treatment. At the same time, psychological concern and treatment guidance for patients with penile amputation are also a link that needs to be paid attention to in clinical practice.

ACKNOWLEDGEMENTS

We thank the patient and all participating authors for their contributions.

FOOTNOTES

Author contributions: Maimaitiming ABLT and Mulati YLSD contribute equally; Maimaitiming ABLT and Mulati YLSD contributed to manuscript writing and editing, data collection and data analysis; Apizi ART and Li XD contributed to conceptualization and supervision; all authors have read and approved the final manuscript.

Supported by Natural Science Foundation of the Xinjiang Uygur Autonomous Region from The First Affiliated Hospital of Xinjiang Medical University, No. 2022D01C782.

Informed consent statement: Informed written consent was obtained from the patient for publication of this report and any accompanying images.

Conflict-of-interest statement: The authors declare that they have no conflict of interest to disclose.

CARE Checklist (2016) statement: The authors have read the CARE Checklist (2016), and the manuscript was prepared and revised according to the CARE Checklist (2016).

Open-Access: This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <https://creativecommons.org/licenses/by-nc/4.0/>

Country/Territory of origin: China

ORCID number: Ye-Li-Su-Dan Mulati 0000-0001-6722-4867; Xiao-Dong Li 0000-0002-0800-3500.

S-Editor: Fan JR

L-Editor: A

P-Editor: Zhang XD

REFERENCES

- 1 **Raheem OA**, Mirheydar HS, Patel ND, Patel SH, Suliman A, Buckley JC. Surgical management of traumatic penile amputation: a case report and review of the world literature. *Sex Med* 2015; **3**: 49-53 [PMID: 25844175 DOI: 10.1002/sm2.54]
- 2 **Chou EK**, Tai YT, Wu CI, Lin MS, Chen HH, Chang SC. Penile replantation, complication management, and technique refinement. *Microsurgery* 2008; **28**: 153-156 [PMID: 18286649 DOI: 10.1002/micr.20470]
- 3 **Bachoo S**, Batura D. Fractures of the penis. *Br J Hosp Med (Lond)* 2021; **82**: 1-9 [DOI: 10.12968/hmed.2020.0715]
- 4 **Patial T**, Sharma G, Raina P. Traumatic penile amputation: a case report. *BMC Urol* 2017; **17**: 93 [PMID: 29017517 DOI: 10.1186/s12894-017-0285-4]
- 5 **Kominsky H**, Beebe S, Shah N, Jenkins LC. Surgical reconstruction for penile fracture: a systematic review. *Int J Impot Res* 2020; **32**: 75-80 [PMID: 31685943 DOI: 10.1038/s41443-019-0212-1]

- 6 **Morrison SD**, Shakir A, Vyas KS, Remington AC, Mogni B, Wilson SC, Grant DW, Cho DY, Rahnama-Azar AA, Lee GK, Friedrich JB, Mardini S. Penile Replantation: A Retrospective Analysis of Outcomes and Complications. *J Reconstr Microsurg* 2017; **33**: 227-232 [PMID: 28002849 DOI: 10.1055/s-0036-1597567]
- 7 **Salem HK**, Mostafa T. Primary anastomosis of the traumatically amputated penis. *Andrologia* 2009; **41**: 264-267 [PMID: 19601940 DOI: 10.1111/j.1439-0272.2009.00925.x]
- 8 **Lowe MA**, Chapman W, Berger RE. Repair of a traumatically amputated penis with return of erectile function. *J Urol* 1991; **145**: 1267-1270 [PMID: 1822958 DOI: 10.1016/s0022-5347(17)38597-x]
- 9 **Henry N**, Bergman H, Foong D, Filobbos G. Successful penile replantation after complete amputation and 23 h ischaemia time: the first in reported literature. *BMJ Case Rep* 2020; **13** [PMID: 32601141 DOI: 10.1136/bcr-2020-234964]
- 10 **Biswas G**. Technical considerations and outcomes in penile replantation. *Semin Plast Surg* 2013; **27**: 205-210 [PMID: 24872770 DOI: 10.1055/s-0033-1360588]
- 11 **Jeziar JR**, Brady JD, Schlossberg SM. Management of penile amputation injuries. *World J Surg* 2001; **25**: 1602-1609 [PMID: 11775199 DOI: 10.1007/s00268-001-0157-6]
- 12 **Roche NA**, Vermeulen BT, Blondeel PN, Stillaert FB. Technical recommendations for penile replantation based on lessons learned from penile reconstruction. *J Reconstr Microsurg* 2012; **28**: 247-250 [PMID: 22399258 DOI: 10.1055/s-0032-1306373]
- 13 **Mydlo JH**, Hayyeri M, Macchia RJ. Urethrography and cavernosography imaging in a small series of penile fractures: a comparison with surgical findings. *Urology* 1998; **51**: 616-619 [PMID: 9586616 DOI: 10.1016/s0090-4295(97)00701-2]
- 14 **Ganem JP**, Kennelly MJ. Ruptured Mondor's disease of the penis mimicking penile fracture. *J Urol* 1998; **159**: 1302 [PMID: 9507863]
- 15 **Amer T**, Wilson R, Chlosta P, AlBuheissi S, Qazi H, Fraser M, Aboumarzouk OM. Penile Fracture: A Meta-Analysis. *Urol Int* 2016; **96**: 315-329 [PMID: 26953932 DOI: 10.1159/000444884]
- 16 **Morey AF**, Metro MJ, Carney KJ, Miller KS, McAninch JW. Consensus on genitourinary trauma: external genitalia. *BJU Int* 2004; **94**: 507-515 [PMID: 15329102 DOI: 10.1111/j.1464-410X.2004.04993.x]
- 17 **Shaer O**. Restoration of the penis following amputation at circumcision: Shaer's A-Y plasty. *J Sex Med* 2008; **5**: 1013-1021 [PMID: 18086176 DOI: 10.1111/j.1743-6109.2007.00675.x]
- 18 **Ottaiano N**, Pincus J, Tannenbaum J, Dawood O, Raheem O. Penile reconstruction: An up-to-date review of the literature. *Arab J Urol* 2021; **19**: 353-362 [PMID: 34552786 DOI: 10.1080/2090598X.2021.1957410]
- 19 **Tuffaha SH**, Sacks JM, Shores JT, Brandacher G, Lee WPA, Cooney DS, Redett RJ. Using the dorsal, cavernosal, and external pudendal arteries for penile transplantation: technical considerations and perfusion territories. *Plast Reconstr Surg* 2014; **134**: 111e-119e [PMID: 24622570 DOI: 10.1097/PRS.0000000000000277]
- 20 **Darewicz B**, Galek L, Darewicz J, Kudelski J, Malczyk E. Successful microsurgical replantation of an amputated penis. *Int Urol Nephrol* 2001; **33**: 385-386 [PMID: 12092662 DOI: 10.1023/a:1015226115774]
- 21 **Babaei AR**, Safarinejad MR. Penile replantation, science or myth? A systematic review. *Urol J* 2007; **4**: 62-65 [PMID: 17701923]
- 22 **Babaei A**, Safarinejad MR, Farrokhi F, Iran-Pour E. Penile reconstruction: evaluation of the most accepted techniques. *Urol J* 2010; **7**: 71-78 [PMID: 20535691]
- 23 **Zhong Z**, Dong Z, Lu Q, Li Y, Lv C, Zhu X, Zhao X, Zhang X, Morales F, Ichim TE. Successful penile replantation with adjuvant hyperbaric oxygen treatment. *Urology* 2007; **69**: 983.e3-983.e5 [PMID: 17482954 DOI: 10.1016/j.urology.2007.02.024]
- 24 **Yang M**, Zhao M, Li S, Li Y. Penile reconstruction by the free scapular flap and malleable penis prosthesis. *Ann Plast Surg* 2007; **59**: 95-101 [PMID: 17589270 DOI: 10.1097/01.sap.0000253745.07940.da]
- 25 **Gui YT**, Cai ZM, Zhu H. Penile Reconstruction. Beijing: Peking University Medical Press, 2010
- 26 **Noh J**, Kang TW, Heo T, Kwon DD, Park K, Ryu SB. Penile strangulation treated with the modified string method. *Urology* 2004; **64**: 591 [PMID: 15351614 DOI: 10.1016/j.urology.2004.04.058]
- 27 **Cook A**, Khoury AE, Bagli DJ, Farhat WA, Pippi Salle JL. Use of buccal mucosa to simulate the coronal sulcus after traumatic penile amputation. *Urology* 2005; **66**: 1109 [PMID: 16286143 DOI: 10.1016/j.urology.2005.05.010]
- 28 **Charlesworth P**, Campbell A, Kamaledeen S, Joshi A. Surgical repair of traumatic amputation of the glans. *Urology* 2011; **77**: 1472-1473 [PMID: 21256558 DOI: 10.1016/j.urology.2010.08.034]



Published by **Baishideng Publishing Group Inc**
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA
Telephone: +1-925-3991568
E-mail: bpgoffice@wjgnet.com
Help Desk: <https://www.f6publishing.com/helpdesk>
<https://www.wjgnet.com>

