



Penoscrotal Strangulation Caused by a Steel Ring: A Case Report

Jiqing Zhang, MD,¹ Xueming Wang, MD,² Zhulin Li, MD,³ Junhui Zhang, MD,¹ Xiaodong Zhang, PhD, MD,¹ and Nianzeng Xing, PhD, MD¹

ABSTRACT

Introduction: Strangulation of the penis and scrotum by a constricting object has been rarely reported.

Aim: To describe a man with penoscrotal strangulation caused by a steel ring and its successful removal.

Methods: A 28-year-old man presented to the emergency department with a 7-hour history of a steel ring lodged at the base of his penis and scrotum. Removal was accomplished with the assistance of fire brigade personnel who used their hydraulic cable cutter to shear the ring. During the removal, there were no complications.

Results: The hydraulic cable cutter avoided thermal injury and shortened removal time compared with procedures described in the literature. The patient's recovery was uneventful, with erectile function restored after 1 week.

Conclusion: Genital incarceration is an urgent clinical situation requiring prompt treatment. However, suitable tools for removing the foreign object are not readily available in emergency and urology departments. Cooperation with other disciplines, even non-medical disciplines, can result in creative and timely measures for removal of the object. **Zhang J, Wang X, Zhang J, et al. Penoscrotal Strangulation Caused by a Steel Ring: A Case Report. Sex Med 2017;5:e131–e133.**

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Key Words: Penoscrotal Strangulation; Steel Ring; Hydraulic Cable Cutter; Metal Ring

INTRODUCTION

A 28 year-old Chinese man presented to our emergency department with a 7-hour history of a grossly swollen and painful penis and scrotum. The patient had placed a stainless steel ring around the base of the penis and scrotum for erection enhancement during intercourse. After intercourse, he was unsuccessful in removing the ring and the penile and scrotal pain and swelling progressively worsened. At presentation, the patient also complained of pain in his lower abdomen and hypesthesia in his genitalia. He did not have dysuria. He had no comorbidities and no history of mental illness or substance abuse.

On examination, the patient was anxious and distressed. Abdominal bulging was absent, although guarding and tenderness were present in the lower abdomen. A 3-cm-diameter by

2-mm-thick ring was positioned tightly at the base of the penis and scrotum (Figure 1A). The incarcerated genitalia were grossly edematous and carmine. The inferior scrotal skin showed areas of breakdown and exudation. The penile shaft and scrotum distal to the ring were cool and diminished in sensation. Before coming to the hospital, the patient had telephoned the fire department whose personnel arrived to render assistance. After consultation with them, the decision was made for the fire personnel to remove the steel ring using their hydraulic cable cutter. After disinfection, 1% lidocaine was injected at the base of the patient's penis. The ring was sheared in two places and successfully removed without injury to skin and other tissue (Figure 1B, C). After removal of the ring, circulation and skin color of the penis and scrotum were restored. Ultrasound of the scrotum was unremarkable (Figure 1D). At follow-up 2 weeks later, the edema had resolved and the scrotal skin had healed. Urination, skin sensation, and erectile function had returned to normal after 1 week. Urinalysis results were normal. On examination, a discontinuous circumferential scar was evident at the base of the penis and scrotum (Figure 1E).

DISCUSSION

Ring-shaped objects are placed on the penis often to enhance sexual performance and for autoerotic purposes or curiosity.^{1,2}

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¹Department of Urology, Beijing Chaoyang Hospital, Capital Medical University, Beijing, China;

²Department of Emergency, Beijing Chaoyang Hospital, Capital Medical University, Beijing, China;

³Department of General Surgery, Beijing Chaoyang Hospital, Capital Medical University, Beijing, China

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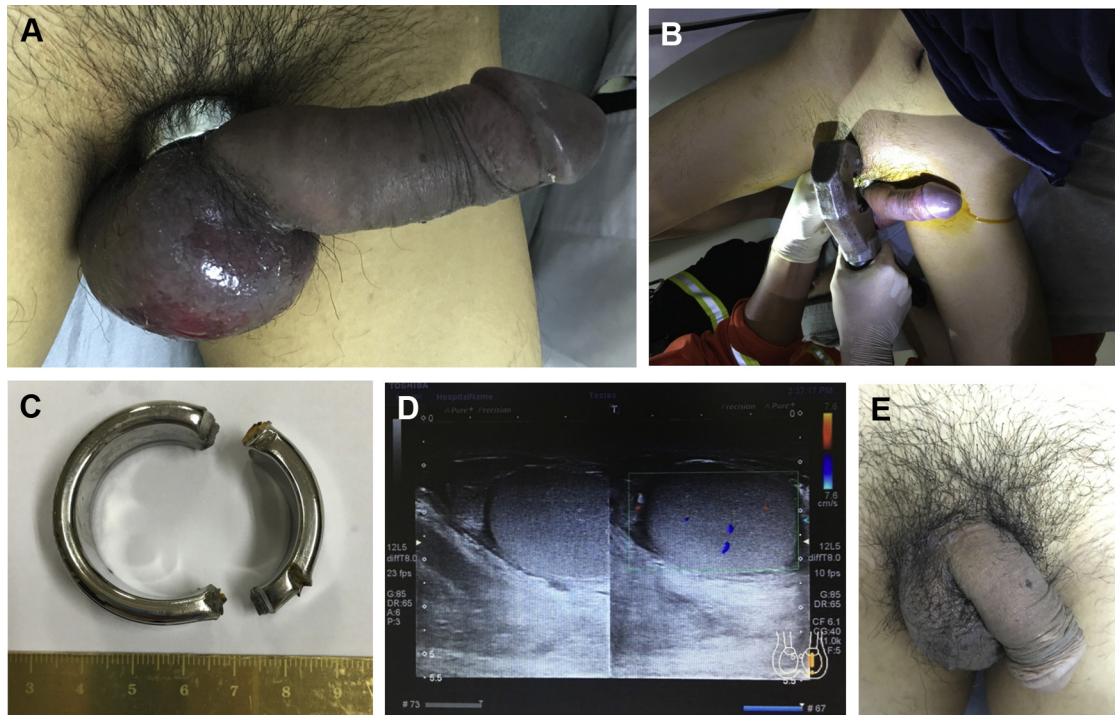


Figure 1. Panel A shows the strangulating ring lodged at the base of the penis and scrotum. The ring was 3 cm in diameter and 2 mm thick. Panel B shows the hydraulic cable cutter used to cut the ring. Panel C shows the sheared ring. Panel D shows unremarkable postprocedure ultrasound of the testes and blood flow. Panel E shows the appearance of the genitalia 2 weeks after the procedure. Arrow indicates the scar at the base of the penis where the ring was placed.

The ring hinders venous return and leads to swelling, followed by arterial and lymphatic blockage and ischemia distal to the ring.^{3,4} The corpora spongiosum cannot accommodate the pressure and the corpora cavernosa, which is protected by the deep penile (Buck) fascia and tunica albuginea, is ultimately damaged.⁵ Timely removal of the offending object is paramount for full recovery of circulatory and urinary functions and in most cases further management is unwarranted. Delay in removal can lead to penile necrosis, urethrocutaneous fistula, and even septic shock and death.^{3–6}

In the present case, the patient had placed a ring at the base of the penis and scrotum, causing strangulation of both organs. To the best of our knowledge, there are only five such cases reported in English.^{1,2,4,7,8}

Management depends on the type and size of the constricting object, time after incarceration, degree of injury, available instruments, and experience of the physicians.² The literature describes four approaches for removal of the object: string technique, aspiration, cutting, and surgery.^{2,5,9,10} Special implements are often needed, which are not always available in the emergency and urology departments.^{1,3,4,9,10} Indeed, management delay is typically caused by locating an appropriate tool.² Severing the object is the most common method described, although procuring special cutting tools can be difficult and the process of cutting could be tedious, with the

possibility of thermal burns and iatrogenic injury.⁵ For example, a bolt cutter,⁸ electric circular grinder,³ and pneumatic drill⁷ have been used for removal of metallic rings. However, their use introduces the risk of thermal burn or mechanical damage to genitalia tissue. Furthermore, a protective device needs to be inserted between the edematous genitalia and the ring, which can increase pressure and pain.⁵ The Winter procedure can be attempted, but the surgery is lengthy and poses a risk of injury.²

We believe that ours is the first report of a hydraulic cable cutter being used to shear a constricting object. The cutter posed no risk of thermal injury and was capable of directional and power adjustments. We also did not need to insert a protective device between the ring and genitalia; thus, no ensuing injury occurred. Various removal techniques have been described in the literature.^{3,4,8–10} However, each case is unique because of the variety of constricting objects. Sometimes, multidisciplinary and even non-medical technical assistance, such as the hospital engineering department and fire department, is essential.^{1–4,7–10}

Corresponding Author: Jiqing Zhang, Beijing Chaoyang Hospital, Capital Medical University, 8 Gongren Tiyuchang Nanlu, Chaoyang District, Beijing 100020, China; E-mail: jqzhang@yeah.net

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STATEMENT OF AUTHORSHIP

Category 1

(a) Conception and Design

Jiqing Zhang; Xueming Wang; Zhulin Li; Junhui Zhang;
Xiaodong Zhang; Nianzeng Xing

(b) Acquisition of Data

Jiqing Zhang; Xueming Wang; Zhulin Li; Junhui Zhang;
Xiaodong Zhang; Nianzeng Xing

(c) Analysis and Interpretation of Data

Jiqing Zhang; Xueming Wang; Zhulin Li; Junhui Zhang;
Xiaodong Zhang; Nianzeng Xing

Category 2

(a) Drafting the Article

Jiqing Zhang; Xueming Wang; Zhulin Li; Junhui Zhang;
Xiaodong Zhang; Nianzeng Xing

(b) Revising It for Intellectual Content

Jiqing Zhang; Xueming Wang; Zhulin Li; Junhui Zhang;
Xiaodong Zhang; Nianzeng Xing

Category 3

(a) Final Approval of the Completed Article

Jiqing Zhang; Xueming Wang; Zhulin Li; Junhui Zhang;
Xiaodong Zhang; Nianzeng Xing

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