

## CASE REPORT

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### Novel Extraction Technique to Remove a Penile Constriction Device

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DOI: 10.1111/j.1743-6109.2011.02598.x

#### ABSTRACT

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**Introduction.** Penile strangulation can be a challenging clinical situation and usually requires prompt treatment. The clinician should be aware of the various techniques to remove such devices.

**Aim.** The aim of this article was to describe a new noninvasive technique, the “pseudo-pulley” method, to remove a penile constriction device.

**Methods.** During an episode of medication-induced hypersexuality, a 63-year-old man presented to the emergency department with a cast iron locking nut of a vehicle towbar lodged at the base of the patient’s penis.

**Results.** The utilization of the “pseudo-pulley” method to remove the constriction device negated the need for more invasive measures. We outline a step-by-step description on this new technique. The patient’s recovery was complete and uneventful.

**Conclusion.** The current case report describes a noninvasive technique for removing a penile constriction device that does not rely on specialized equipment and industrial drills that can cause iatrogenic injury. **Katz DJ, Chin W, Appu S, Harper M, Vukasin F, Tay YK, Pang C, and Dowling C. Novel extraction technique to remove a penile constriction device. J Sex Med 2012;9:937–940.**

**Key Words.** Penile Incarceration; Penile Foreign Body; Penile Entrapment; Penile Strangulation; Penile Constriction Device; Penile Injury

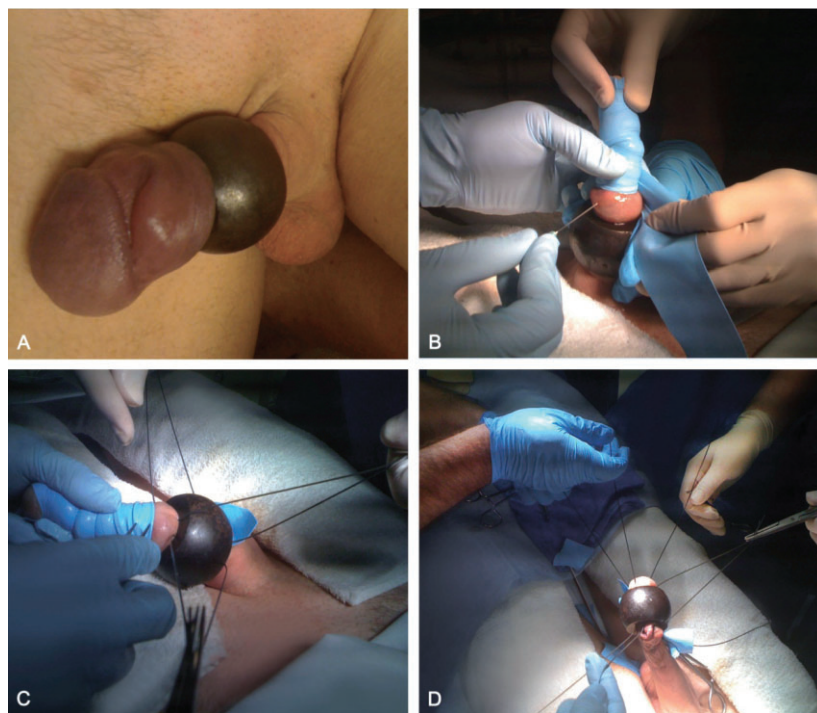
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#### Introduction

Penile strangulation can be a challenging clinical presentation and usually requires urgent management. This is not a new clinical phenomenon, with the first reported case in 1755 [1]. It is an uncommon problem with mainly case reports described in the literature. Management depends on the type of object involved, time elapsed since placement, grading of consequent injury, and available equipment and expertise [2]. Herein, we describe a novel technique for removing a reinforced cast iron locking nut of a vehicle towbar that had been lodged at the base of the patient’s penis (Figure 1A).

#### Case Report

A 63-year-old farmer with a 15-year history of Parkinson’s disease recently had multiple adjustments to his pramipexole dose. This dopamine agonist has been previously linked to pathologic hypersexuality [3]. Prior to pramipexole administration, he denied any previous hypersexual behavior. The patient presented to one of our regional emergency departments having a cast iron locking nut from a vehicle towbar lodged at the base of his penis (Figure 1A) for about 24 hours. On examination, he was distressed, had choreiform type movements, and was in urinary retention. The penis was engorged, edematous, and progressively



**Figure 1** The panels demonstrate the cast iron locking nut causing penile strangulation (A) and the application of a neoprene tourniquet and the release of edema in the proximal shaft (B). Placement of four evenly spaced Nitinol guide wires beneath the ring (C) allows for the sequential pulling of the proximal end of the wires at 45° (D), which advances the ring distally off the penis.

becoming more swollen. The emergency department physicians were unable to remove the object because of the immense penile swelling and the diameter of central lumen of the ring was only 21 mm. In addition, personnel from the Fire Brigade and State Emergency Service concluded that they would be unable to cut through the reinforced cast iron nut, even with a diamond-tip saw as it was 39 mm wide and 18 mm thick and weighed 471 g. This was confirmed after discussion with a metallurgist and a locksmith. The urology service was then consulted to remove the object.

Given the clinical picture, he was expeditiously transferred to the operating room and administered a general anesthetic. The first key step was to apply a progressive overlapping tourniquet to the penis from the glans to the base using a neoprene tourniquet (10 cm; Defries Silicone Tourniquet, Defries Industries Pty Ltd, Melbourne, Victoria, Australia) (Figure 1B). As is evident from Figure 1B, a rim of edematous shaft skin developed on the proximal shaft and much of the fluid was released after several punctures with a 21 g needle. The tourniquet was then applied to that area to keep the edema from reforming. We attempted to use a technique similar to the “modified string method” in order to advance the metal nut, but it was too tight around the shaft to be successful [4]. Our next aim was to create a

“pseudo-pulley” system. This involved passage of four straight Nitinol hydrophilic guide wires (0.97 mm × 150 cm; Terumo Radiofocus, Terumo Radiofocus Guidewire, Terumo Corporation, Elkton, MD, USA) under the metal nut (Figure 1C). Because of the floppy tip on the wires and the adherence of the metal nut to the penile shaft, we needed to use 5-F ureteric catheters (Cook Pollack Open-End Flexi-Tip, Cook Urological Incorporated, Spencer, IN, USA) to help direct the wires. Once the four guide wires were in place, the tourniquet was removed and lubrication was liberally applied to the shaft. The guide wires were then used in a pulley fashion, with the distal ends being kept taut, while the proximal ends were sequentially pulled at 45°. This allowed the metal nut to be lifted ever so slightly and to be directed distally off the penis. The penis only had mild abrasions present once the object has been removed.

The patient was admitted to the ward with an indwelling catheter and oral antibiotics. Over the next 24 hours, his penis became more swollen but subsided over the next 48 hours. The catheter was removed on day 3 and he voided well and to completion. After a neurology review and an adjustment of his medications, he was discharged. The patient’s hypersexuality behavior and his choreiform movements settled shortly thereafter [2].

## Discussion

Penile strangulation can pose a major challenge to emergency physicians as well as to surgeons. This is a rare clinical scenario with only about 60 cases being published. The presentation of each case varies, and therefore, the approach to management is nonuniform. This case report describes a novel technique for removing a large cast iron locking nut that was unable to be removed by previously described maneuvers.

The reasons for placement of penile constriction devices are often to enhance erections, for sexual gratification or, as in this case, related to an episode of hypersexuality. In Taiwan, a form of Chinese kung fu called Nine-Nine Chi-Gung uses the practice to improve sexual function [5].

A variety of metallic and nonmetallic rings have been used [6–8]. Metallic devices include wedding rings, steel washers, ball bearing rings, and nuts. Case reports of nonmetallic devices have described rubber bands, strings, hair, and plastic bottles.

The complications of penile strangulation vary and depend on several factors including the degree of constriction and the time elapsed until presentation. Several authors have attempted to grade such injuries. Bhat et al. developed a five-tier grading system [9]. Grade I causing only edema, while Grade II occurred when penile paresthesia was present. Grade III involved injury to skin and urethra but no urethral fistula. When a fistula did occur, this is classified as Grade IV. Gangrene, necrosis, or complete amputation was considered a Grade V injury. Another grading system by Silberstein et al. categorized injuries into low- and high-grade [2]. Low-grade injuries are likely to require no further surgical intervention after the constricting device has been removed, while high-grade injuries do require it. The current case would be classified as a Bhat grade III injury or a Silberstein low-grade injury.

The acute management of penile strangulation focuses on expeditious removal of the constricting device in order to prevent higher-grade injuries from developing. Ideally, one should employ a method that is noninvasive and quick. Multiple techniques have been described [4,5,10]. During the initial evaluation phase of our management, we noted the penis becoming more swollen and discolored, and the patient developed urinary retention. We considered and tried several previously described methods to remove the locking nut, but none were successful. Before we embarked on more invasive, time-consuming procedures, we

employed this novel “pseudo-pulley” system. The key points to this technique involve a progressive distal-to-proximal tourniquet to the penis (Figure 1B), aspiration of the edema (Figure 1B), passage of evenly spaced wires under the ring (Figure 1C), and sequential pulling on the wires at a 45° angle (Figure 1D).

## Conclusion

Penile strangulation can present in a myriad of ways from mild edema to penile-threatening gangrene. The clinician should be aware of the various techniques to remove these devices in a timely manner. The current case report describes a non-invasive technique that does not rely on specialized equipment or industrial drills that can cause iatrogenic injury. The “pseudo-pulley” method of removing a tight penile constricting device can be added to the armamentarium of the emergency physician or urologist who may occasionally be faced with the uncommon yet potentially serious condition of penile strangulation for which other noninvasive extraction techniques have failed.

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*Conflict of Interest:* None.

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