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Short Communication

Dental High Speed Turbine: Effective Method for Emergency Removal of Penis Strangulation

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ABSTRACT

Penile strangulation is an uncommon urological emergency that requires prompt intervention to avoid potentially serious sequelae including loss of the distal penis secondary to ischemia and subsequent gangrene. Our team continued to pay attention to penile strangulation and successfully completed several emergency operations. In our experiences, Dental high speed turbine is an effective method to quickly remove penile strangulation.

Keywords: Penile; Ischemia; Subsequent gangrene

ABOUT THE STUDY

Penile strangulation is a rare emergency that requires prompt evaluation and urgent intervention to avoid disastrous consequences. The objects which are usually used by adults and adolescents for penile entrapments are metallic and nonmetallic. The foreign bodies include heavy metal rings, hammerheads, metal cones, pipes, plastic bottle necks, sprockets, and plumbing cuffs [1]. Strangulation may lead to a wide range of vascular and mechanical injuries. Urgent treatment is required, as potential delayed management may lead to mild, reversible vascular obstruction, lymphedema, loss of penile sensation,ischemic,skin necrosis/ulceration,urethrocutaneous fistula, urethral injury,gangrene,and even auto amputation of penis and sepsis. Management should be guided by trauma grade, incarceration time, type of constricting device, and available equipment [1-3].

According to the Bhat Classification and Silberstein Classification, penile injury was divided into five categories [4].

1. Grade 1: Edema of distal penis. No evidence of skin ulceration or urethral injury
2. Grade 2: Distal edema, skin, and urethral trauma, corpus spongiosum compression, and decreased penile sensation
3. Grade 3: Skin and urethral trauma, no distal sensation
4. Grade 4: Separation of corpus spongiosum, urethral fistula, corpus cavarnosum compression, no distal sensation
5. Grade 5: Gangrene, necrosis, or complete amputation of distal penis.

Bhat grade I-III injuries and most of the time require no further intervention after removal of the encircling object. In contrast, Bhat grade IV and V injuries and usually require surgical intervention. Previous studies recognized higher incidence of high-grade injuries in patients presenting after 72 hours (29.1%) in comparison with patients presenting within 72 hours (0%). Additionally, in such an emergency circumstance, patients are often anxious and fearful given the possibility of significant penile injury.

Removing an object is time-consuming. The urologist's challenge is to relieve the penis of strangulation as quickly as possible to prevent complications [5]. After 72 hours, patients are more likely to experience significant complications such as pressure necrosis, urethral fistula, penile gangrene, and stricture [6].To date, there seems to be no consensus guidelines on removing entrapped penile constrictors. Due to rarity of occurrence most surgeons have no experience in removing metallic penile objects. Instruments such as pliers, angle grinder, chisel, dental drill saw and industrial bolt cutter have been employed in cutting objects to relieve strangulation [7,8]. Depending on the entrapment degree and distal edema caused by the encircling penile object, releasing it may be challenging.

Cutting is the most commonly used method of removal, despite the difficulty and danger of penile damage. The choice of the method for removal of the encircling object depends on its material and size, the incarceration time, the trauma grade, and the equipment available. If a massive orthopedic cutter can be

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inserted beneath the ring to cut it, it will be the quickest but not always the safest technique of removing a thick metal ring. A little cutter, on the other hand, that can easily penetrate beneath the ring without harming the penis is unlikely to cut heavy metal. Cutting metal produces heat easily as a byproduct, which may heat adjacent tissues, so care must be taken to cool the metal during this process [9,10].

Dental high speed turbine is an effective method to quickly remove penile strangulation [10].

- Stomatology is a routine department of the hospital; it's easy to get help of dentistry. The setting of dental chair can adjust a variety of body positions, which is convenient for doctors to operate
- The working interface of turbine is small and the operation is flexible. Anesthesia is not required during operation
- Cutting produces heat as a byproduct, which may heat adjacent tissues, so care must be taken to cool during this process. High speed bit cutting could cut the ring rapidly; water spray cooling device of the turbine could prevent iatrogenic injury to the penis effectively
- The removal process of dental high speed turbine is rapid, effective and smooth in a short duration without significant physical exertion.

The strangulating penile nut was safely relieved with as little discomfort for the patient as possible. The visual sensory stimulation of patients is small, which can effectively reduce psychological pressure. In adult men, strangulation of the penis is often found in patients who pursued to improve their sexual performance by prolonging the duration of erection or as part of autoerotic games. In adolescents, strangulation has also been reported with hair tourniquets, rubber bands and threads as common constricting objects. In our experience, there is no correlation between surgical success rate and age discrimination. Quickly remove penile strangulation as soon as possible is the important influencing factors. Previous studies also support the view [11]. More education is necessary to inform users of penile nuts on proper usage and how to prevent strangulation and its complications. For teenagers, sex education should also be strengthened to reduce the incidence of penis strangulation.

CONCLUSION

After surgical intervention, patients with underlying mental conditions or self-injurious behavior should be referred to a psychiatrist for psychotherapy. Urologist should be prepared to manage challenging and emergency cases of penile strangulation. Dental high speed turbine is a simple, cheap and effective method for emergency removal of objects such as nut or rings from strangulated penis with minimal complications.

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