Treatment of penile strangulation by the rotating saw and 4-needle aspiration method: Two case reports

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INTRODUCTION (EXTENDED VERSION)

Penile strangulation, which is a compartment syndrome, requires urgent treatment in order to nourish corpora cavernosa as well as corpus spongiosum. Although the appearance of this disturbance in the medical literature dates back to as early as the mid 1700s (1), it is on the odd occasion and has been described nearly 70 times in the English literature. Constricting rings are the most common cause of penile strangulation. They can be metallic or non-metallic and are mostly used for sexual purposes. Unless treated promptly, the rings can result in permanent and severe damage, including penile amputation (2).Various removing techniques have been described especially for metallic constricting rings. Here, we report on two cases of penile strangulation due to metallic constricting rings that presented to our emergency department with different clinical presentations and were treated surgically.

DISCUSSION (EXTENDED VERSION)

Penile strangulation is a rare clinical entity that is mostly caused by the patient himself for sexual purposes. Although either metal or non-metal rings are used for pleasure, the most commonly reported objects causing strangulation are metal rings. Penile strangulation injuries vary from mild edema to gangrene of the penis (2, 3). *Bhat et al.* described a functional grading system of penile injuries including five categories ranging from penile edema to gangrene (3). Later, *Silberstein et al.* simplified this grading system with a modification of two broad categories as low- and high-grade penile injuries (4). High-grade injuries are defined as injuries that are likely to require surgical intervention (4). The patients presented here had low-grade injuries and no surgical intervention was performed after removal of the rings.

The treatment of penile strangulation is decompression of the constricted penis to facilitate free blood flow and micturition. Non-metallic rings can usually be removed simply by cutting the constricting object. Interestingly, high-grade penile injuries are more frequently caused by non-metallic constricting objects (4). Although metallic constricting rings placed around the penis present a challenge to urologists, various instruments may be used whenever available, such as a string (5), modified string (6), hammer (3), Gigli saw (7), rotating saw (4), and electric grinder (8). Sometimes, combination (9) or alteration of treatment modalities (10) might be needed as in our second case. Penile aspiration technique in penile strangulation was first described by *Chang et al.* who used two 21-gauge butterfly needles. In our case, for the first time to our knowledge, we performed penile aspiration by using four needles in order to achieve rapid detumescence.

While protecting the patients' organ, the surgical team should be aware of potential work injuries for both the patient and staff. *Horstmann et al.* reported an eye problem in one of the medical staff (9). Other than risk for blood or fluid spillage, heavy-duty technical equipments scatter metal sparks; therefore, wearing eye-protective glasses should not be neglected.

CONCLUSION

Penile strangulation may result from self-induced priapism and should be treated as an emergency urologic case. If the surgical team fails to remove a constricting ring, alternative treatment modalities should be considered.

Figure 2.
Metallic ring on the proximal part of the penis.

No conflict of interest declared

Figure 3.
Heavy-duty ball-bearing ring stuck at the coronal sulcus.

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