

# *Surgical management of retained needle in a transgender woman's phallus*

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*Intracavernosal self-injection (ICI) is an effective treatment for erectile dysfunction. A rare but serious complication is needle breakage. We report an unusual case of a 51-year-old transgender female patient who did not desire gender-affirming surgery, and used ICI to treat her longstanding erectile dysfunction. She presented to the emergency department 2 months after needle breakage*

*during ICI, and was subsequently successfully treated with intraoperative fluoroscopy and needle fragment extraction. It is important to recognize transgender patients may desire to preserve sexual function, and for providers to engage in discussion surrounding sexual health throughout treatment for gender dysphoria.*

**Key Words:** erectile dysfunction, fluoroscopy, intracavernosal injection, penile foreign body, transgender

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## Introduction

Intracavernous self-injection for erectile dysfunction is an effective treatment that has been in use for several decades.<sup>1</sup> Well described adverse events include penile pain, hematoma formation, priapism, penile burning, and ecchymosis.<sup>2</sup> Needle breakage is a rare complication of Intracavernosal self-injection (ICI) described in several case reports.<sup>3-9</sup> Various management strategies have been

employed, including: non-operative management with antibiotics, immediate or delayed surgical exploration with intraoperative radiographic localization.

## Case report

Our patient is a 51 year-old transgender female (assigned male at birth) who was treated with feminizing hormone therapy for gender dysphoria for over 6 years. She was taking estradiol (2.5 mg), finasteride (6 mg), and spironolactone (200 mg) daily. She had longstanding vasculogenic erectile dysfunction prior to beginning her transition. She had intermittent success with sildenafil in the past, but switched to ICI 2.5 years ago for its greater reliability.

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The patient had been using Bimix (papaverine and phentolamine) intracavernosal injections without issue or complications, until one use where she noted the needle tip had broken off. She developed significant pain, which prevented further sexual activity, and this prompted her to seek medical attention at an outside institution. She underwent penile exploration and degloving, which failed to find and extract the needle fragment.

Seven weeks later she presented to the emergency department due to persistent pain, and a 3 cm plaque with some fluctuance in the dorsal aspect of the penis was noted on physical exam. Ultrasound revealed a small ill-defined tunical fluid collection on the dorsal (2.3 cm x 0.8 cm x 0.4 cm) penis containing an echogenic linear structure measuring 2 mm. The patient showed no signs of systemic infection, had no evidence of collection amenable to drainage, and was discharged with a 10-day course of Keflex and instructions to follow up in urology clinic. It was felt the foreign body would likely be too small to isolate with bedside incision and drainage.

After an additional emergency department visit the following week, a larger fluctuant collection had developed that was then drained in clinic with percutaneous aspiration under local block. A culture resulted in no growth. A CT scan performed after aspiration showed diffuse soft tissue swelling with a small foreign body visualized in the superficial soft tissues and resolution of the collection, Figure 1.

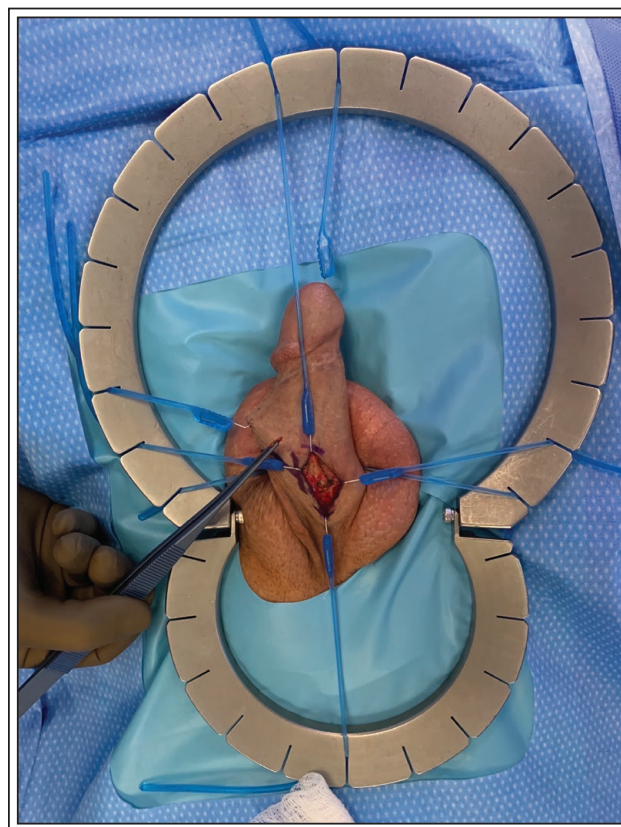
Several months later, the patient was eager to pursue definitive intervention for the retained foreign object



**Figure 1.** CT scan showing soft tissue swelling along the penis diffusely, with small foreign body visualized and no frank abscess.



**Figure 2.** Intraoperative fluoroscopy localizing needle tip.



**Figure 3.** Intraoperative extraction of needle tip.

as it continued to cause substantial pain, precluding intercourse. She was educated on the relevant risks of surgery, with emphasis on the potential inability to locate the needle fragment, injury to the neurovascular complex resulting in worsening erectile function, and the possibility of worsening pain symptoms. The C-arm was docked to provide intraoperative fluoroscopic guidance. Scout images showed a linear radiodensity located at the proximal right aspect of the shaft. Using bi-planar rotation, the needle tip was triangulated and a marking pen demarcated the location, Figure 2. A Scott's retraction was used to aid in exposure. Metzenbaum scissors were used to dissect the subjacent dartos tissue. The 7 mm needle tip was then visualized and excised in its entirety, Figure 3. Dissection was performed superficial to the Buck's fascia and thus minimized risk of injury to the neurovascular bundle. A post-excision fluoroscopy image did not reveal any retained component. She was advised to avoid intercourse for 4 weeks.

The patient recovered well postoperatively, with no further pain or signs of infection. She was able to resume having sexual intercourse. The patient opted to use PDE-5 inhibitors going forward, as she had intermittent success with them previously.

## Discussion

While common complications of penile injection therapy include penile pain, hematoma formation, priapism, penile burning, and ecchymosis, there is also risk of needle breakage. There are several options for management that have been outlined in various case reports.

One case report stressed that extraction may not be necessary in patients with non-palpable retained needle in the absence of penile abscess, and non-operative management with antibiotics should be considered.<sup>10</sup> Exploration comes with its own risks. In our case, the needle was located in the dartos tissue, however if the needle had been in the tunica albuginea or the corporal body itself, it would have been necessary to open Buck's fascia and elevate the neurovascular bundle. Opening the corporal body may lead to damage to the cavernosal tissue and worsening of erectile dysfunction, or even result in Peyronie's disease.<sup>3</sup>

Our patient was unique in that she had previous unsuccessful degloving and penile exploration at an outside institution and was experiencing worsening pain and swelling 2 months after initial presentation. This degloving procedure likely rolled back the subcutaneous tissue along with the needle, such that they were never able to find the fragment.

Intraoperative fluoroscopy has been described as a useful modality for needle extraction.<sup>4</sup> Other cases have reported success using high-frequency sonographic guidance, which avoids further radiation exposure.<sup>5</sup>

Our case was also unique in that it was the first case report of a retained needle from ICI in a transgender patient. Not all transgender patients may pursue gender-affirming treatments such as feminizing hormone therapy or surgery, and some transgender women may wish to maintain the ability to achieve erection. Little research has focused on transgender persons who do not wish to undergo gender-affirming treatment.<sup>6,7</sup> It is important to address sexual health in transgender individuals, and this conversation may evolve as their gender dysphoria is treated. It is established that estrogen and antiandrogens can impair erectile function. Though the exact role of testosterone in penile erection is not fully understood, it is generally accepted that testosterone deficiency has an association with sexual dysfunction in natal men.<sup>8</sup> Bettocchi et al looked at erectile function in 25 trans-women on HRT (on average 55 months), which used the IIEF-15 questionnaire to assess erectile function, and found no correlation between the women's level of testosterone and sexual function. They did find the nocturnal penile tumescence (NPT) test did correlate well with testosterone levels.<sup>9</sup> Interestingly, the 25 women in the study all reported their erectile functioning as being similar to how it was before hormone therapy.

Bartolucci et al assessed sexual quality of life using the sexual activity facet of the World Health Organization Quality of Life (WHOQOL)-100 in 67 transgender patients who had not undergone gender-affirming surgery, 39.8% of whom were receiving hormonal treatment.<sup>7</sup> They found that receiving hormonal treatment was related to a better subjective perception of sexual quality of life and that one-quarter of patients related their sexual life as "good and satisfactory" prior to undergoing any surgery. This highlights that there may be a proportion of trans patients with satisfactory sexual health who may not desire further treatment, and that for a portion of these patients on hormonal therapy may alleviate a significant amount of stress from gender dysphoria.

Overall, this case report highlights needle breakage as a notable complication of ICI and identifies a transgender female patient who benefitted from ICI to treat erectile dysfunction. Before initiating gender-affirming treatment, we suggest that patient preferences and desires about future sexual function be explored, and that treatment plans be individualized to improve their quality of life. □

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