

Recurrent Penile Fracture—Case Report and Alternative Surgical Approach



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ABSTRACT

Introduction: Penile refracture is an exceedingly rare event, with very few published studies. To the best of our knowledge, this is the first documented case in the literature of penile fracture with 3 same-site recurrences.

Aims: To describe the case of a 25-year-old Caucasian man with recurrent penile fracture ultimately treated with resuture and patch reinforcement.

Methods: Patient history (clinical and surgical) and literature review.

Results: After the 3rd same-site recurrence, patch reinforcement over the sutured area was performed. The patient had an uneventful recovery and no recurrences to date.

Conclusion: There is no evidence indicating the superiority of non-absorbable sutures. Bovine pericardium reinforcement over the sutured area was used to minimize the chance of another recurrence. More studies are necessary to investigate its safety and efficacy in this scenario. **Nascimento B, Guglielmetti GB, Miranda EP, et al. Recurrent Penile Fracture—Case Report and Alternative Surgical Approach. Sex Med 2018;6:263–266.**

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Key Words: Penile Fracture; Recurrent Penile Fracture; Penis; Surgical Intervention; Genitourinary Trauma

INTRODUCTION

Penile fracture (PF) is a rare event, with a reported annual incidence rate of 0.29 to 1.36 per 100,000 men.¹ Classic clinical features are hearing a popping sound after buckling of the penile shaft during sexual intercourse, rapid formation of penile hematoma, and loss of erection.² The most accepted treatment is surgical exploration, hematoma evacuation, and suture of the tunical defect, with studies showing up to 98.6% of adequate erections after long-term follow-up.^{2,3}

Recurrent PF is an exceedingly rare event, with very few reports in the literature. Recurrences can occur at different locations, including contralaterally,^{4,5} ipsilaterally,^{6,7} and at the same site.^{8,9} This is, to the best of our knowledge, the 1st report

of recurrent PF with 3 same-site recurrences. We discuss clinical features and surgical management.

CASE REPORT

A 25-year-old Caucasian man presented to the emergency room complaining of pain and hematoma after sexual intercourse with his partner 7 days previously. His surgical history was notable for correction of ventral congenital penile curvature 6 years previously, when he was 19 years old. Surgery was performed by a different team; the patient did not know the surgical technique and had no surgical report of the procedure. The patient reported no residual curvature after surgery but developed persistent dorsal penile pain that was managed with corticosteroid injection at the plication site 1 year later, performed by the same team. The patient also admitted regular cocaine abuse. Physical examination showed a penile hematoma at the right side of the mid-shaft. Magnetic resonance imaging (MRI) of the penis depicted a 4-mm tear on the lateral and dorsal aspect of the right corpus cavernosum (CC). Penile exploration was done through a sub-coronal incision, and evacuation of the hematoma and repair of the defect were performed using absorbable suture (polyglactin 2-0). His early postoperative course was uneventful, and he was

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discharged on the 1st postoperative day with instructions to maintain sexual abstinence for 1 month.

The patient failed to follow instructions and returned 13 days later reporting pain and hematoma after sexual stimulation with his girlfriend during cocaine use. A larger mid-shaft hematoma on the right aspect of the penis was noted and MRI visualized a 10-mm tunical defect on the site of the previous surgery. Penile re-exploration was performed and a new repair of the tear was done, this time with non-absorbable suture (polypropylene 2-0). His postoperative course was uneventful, and the patient received strict instruction for sexual abstinence for at least 30 days. During early follow-up, the patient had no complaints of pain, erectile dysfunction, or penile curvature and was allowed to resume sexual activity.

He presented 7 months later, after traumatic sexual intercourse, with similar symptoms, for physical examination. PF was confirmed with MRI of the penis, showing a 15-mm albuginea tear on the site of previous surgeries. Penile exploration with the same incision confirmed the location of fracture and once again the defect was repaired with polypropylene 2-0. This time the patient was instructed abstain from sexual activity for 30 days and to avoid vigorous sexual intercourse because of his increased risk of recurrent PF.

Unfortunately, a similar clinical presentation was observed 4 months later after sexual activity without intercourse. Penile exploration confirmed the same location of injury and for the 3rd time the tear was repaired with polypropylene 2-0. Considering the recurrence seen in this patient, reinforcement of the sutured site was performed with a 2.5- × 2.5-cm bovine pericardium patch above the site of all previous fractures (**Figure 1**). His postoperative course was uneventful, with no signs of infection, and he was discharged on the 1st postoperative day. All surgeries were performed by 2 surgeons with expertise in penile surgery (J.C. and G.B.G.) and written informed consent was obtained. At his most recent follow-up, 6 months after the last procedure, the patient had resumed sexual activity with no complaints of erectile dysfunction and no signs of recurrence. The patient reported a slight right curvature of 12° at self-measurement at home with a goniometer during a rigid erection. However, the patient denied any negative impact on his penetration ability or his overall satisfaction with his sex life.

DISCUSSION

Refracture (RF) is an exceedingly rare event and reasons for this unfortunate outcome should be analyzed to prevent similar cases.

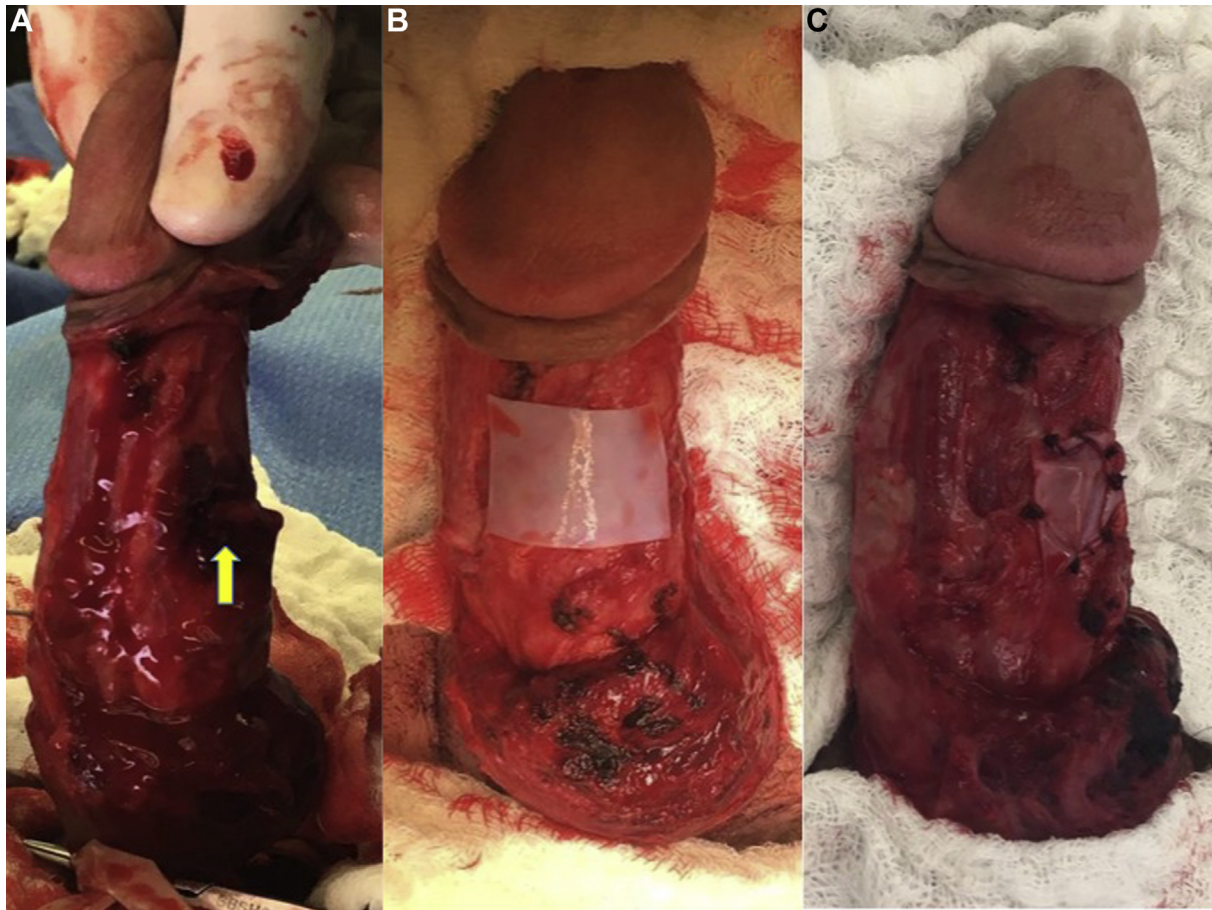


Figure 1. Panel A shows defect seen at 3rd recurrence. Panel B shows a calculation of the area to be covered with a bovine pericardium patch. Panel C shows final aspect after patch reinforcement.

In the initial episode, this patient presented for medical assistance 7 days after the trauma. There is a strong body of evidence showing better short- and long-term outcomes after surgical rather than conservative management, although the optimal time for repair is still unclear.³ Interestingly, 1 of the very few reported cases of recurrent PF was in a patient after delayed repair of PF.⁷ Long-term monitoring of those patients might be necessary to evaluate whether there is any significant association.

Also, the importance of sexual abstinence for postoperative care is demonstrated in this case. The first RF of this patient occurred only 13 days after the 1st surgery, during sexual stimulation, much earlier than the recommended 30-day abstinence period. In regard to sexual habits, the patient reported an average frequency of 2 times per week (mainly on weekends), with no particularly preferable sexual position and not practicing anal sex. Because this patient is younger than most reported cases, we hypothesize his youth might have contributed to this unfortunate outcome after the early recovery of hard nocturnal erections and the consequent increased stress at the operated area in an early phase.

The choice of absorbable vs non-absorbable suture in the surgical correction of RF also is a topic of debate. Although some investigators have formally recommended the use of non-absorbable suture in such cases,^{8,9} more recently, studies have shown successful outcomes after repair with absorbable sutures, with the advantage of having less risk of a patient complaining of palpable nodules. In our patient, the 1st correction was performed with absorbable suture and all subsequent procedures were done with non-absorbable suture. In fact, non-absorbable sutures can add tissue resistance for a longer period than absorbable sutures, but there are no convincing data suggesting the need for its routine use. However, the use of a non-absorbable suture in this patient did not prevent recurrence. There is still no evidence that supports the use of either suture type, but it seems reasonable to consider that, for patients with same-site RF, non-absorbable sutures could be used in an attempt to prolong tensile strength support.

As previously discussed, reports in the literature include RF at the contralateral CC,^{4,5} ipsilaterally at a new site,^{6,7} and ipsilaterally at the same site.^{8,9} Cases of same-site fracture, similar to the present case, foster the concept that, despite a complex healing process, final tissue resistance never reaches that of unwounded tissue. It is believed that after PF repair, the healing process with fibrosis takes over, with collagen deposition for up to 6 weeks and further remodeling with tensile strength gain for up to 2 years.⁸ Nevertheless, Punekar and Kinne⁹ described in 1999 the case of a 42-year-old man with same-site RF 9 years after the 1st PF, indicating that, even after 2 years, this area could remain susceptible to injuries.

In contrast, some reports of ipsilateral RF at different sites have suggested that, in the presence of a new increase in intracavernosal pressure, healed tissue can better support tension compared with an unwounded area of the albuginea.^{6,7}

However, this rationale does not consider that CC pressure is not homogeneously the same during sexual intercourse. During traumatic buckling of the penile shaft, some areas might be subjected to higher pressures, leading to a tunical tear at this point regardless of previous injuries. Furthermore, RF in the contralateral CC supports this theory, in which the 2nd fracture was likely due to a different traumatic mechanism.

This patient had an important factor that could at least in part explain this extremely unusual evolution. The previous correction of ventral congenital penile curvature and corticosteroid injection at the plication site could have created a permanently weaker area. Although intralesional corticosteroid injection has been used in the treatment of Peyronie disease, newer data have failed to show good results and its use is currently not recommended because of noticeable side effects such as local tissue atrophy and fibrosis.¹⁰

Therefore, after reviewing the case and considering all the recurrence episodes seen in this patient, the surgical team chose to reinforce the sutured site with a bovine pericardium patch. To the best of our knowledge, there is no previous report of this technique. However, the use of bovine pericardium is well established for other purposes in penile surgery and is considered a safe technique.¹¹ Recovery was uneventful, with no signs of infections, and, to date, the patient has made no complaints of erectile dysfunction. It is still too early to make a formal recommendation of this technique and longer follow-up and/or additional cases are needed for that. Given this patient's non-compliance, loss to follow-up is always a concern because he might seek medical attention elsewhere.

In real-life settings, if facing such a severe case of RF with 3 unsuccessful outcomes after traditional surgical correction, surgeons should discuss the alternative of a graft with the patient and make a shared decision. As discussed elsewhere,² after accurate diagnosis with MRI and excluding concomitant urethral injury, PF repair can be performed as elective surgery for up to 48 hours with no compromise in outcome. This time can be valuable to allow hospital and insurance to provide graft materials. If a graft is still unavailable or the patient does not want a technique with no robust level of evidence, then traditional PF correction should be attempted.

CONCLUSION

Penile RF is an exceedingly rare event, with few reports in the literature. There is no evidence indicating the superiority of non-absorbable sutures. Bovine pericardium reinforcement over the sutured area was used to minimize the chance of another recurrence. More studies are necessary to investigate its safety and efficacy in this scenario.

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