

Case Report

A Case of Phantom Penile Pain Following Penectomy

Benjamin Croll MD¹, Maria Voznesensky MD^{2*}

¹University of South Florida Morsani College of Medicine, Tampa, Florida

²Lehigh Valley Health Network, Allentown, PA USA

***Corresponding author:** Maria Voznesensky MD, Lehigh Valley Health Network, Allentown PA, USA. Email: voz.maria@gmail.com

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Abstract

Phantom pain following penectomy is a phenomenon that, while found sparsely throughout urologic literature, is recognized as a valid potential consequence of the surgery. In this report, we describe a case of phantom penile pain following penectomy and orchiectomy, secondary to infection of a penile prosthesis. Following failure of analgesic medication, the patient was treated with extensive physical therapy, resulting in full resolution of symptoms. This case describes both the presentation and management of the intriguing phenomenon of penile phantom pain.

Introduction

Phantom limb pain (PLP) following penectomy is a phenomenon that has been seldom documented in contemporary urologic literature. Still an ambiguous phenomenon, PLP has been found to correspond to pathologic changes in both peripheral and central nervous systems following amputation. While estimates of PLP have been reported to be as high as 85% in orthopedic amputees [1], descriptions of presentations in urology have been lacking.

In this report, we describe a case of phantom penile pain following penectomy and orchiectomy with multiple debridements, secondary to infection of a penile prosthesis followed by successful treatment with physical therapy. This case describes both the presentation and management of the perplexing phenomenon of penile phantom pain.

Case Report

A 61-year-old male with a history of inflatable penile prosthesis (IPP) for 30 years and poorly controlled type 1 diabetes mellitus was transferred from an outside facility for penile cellulitis. The infection presented as purulent excoriations involving the corona of the glans, urethral meatus, and dorsal penile shaft (Figure 1). CT imaging revealed the presence of an infectious fluid collection through the corpora cavernosa, confirming suspicion of an infected IPP with penile gangrene. The patient was taken for explantation and surgical debridement with successful removal of the intact IPP.

Seven months following hospital discharge, paresthesia was reported at the healed incision site, for which topical lidocaine-prilocaine was prescribed by urology,



In the subsequent 30 days, the patient underwent progressive surgical debridement five times. A partial penectomy was performed on hospital day 5 with complete penectomy following on hospital day 9. The urethra was oversewn and a suprapubic catheter was placed. Re-exploration on HD 13 revealed scrotal skin and testicular necrosis, and consequentially, a bilateral orchiectomy was performed. An ICU stay of 16 days was required secondary to hemodynamic instability and respiratory compromise. While conscious, pain control was achieved using standing Tylenol, oxycodone, and IV morphine. His hospital stay was additionally complicated by blood glucose lability and toxic metabolic encephalopathy secondary to his critical illness. On hospital day 40, he was discharged to an acute rehabilitation facility with vacuum-assisted wound dressing and suprapubic catheter in place. Pain control was achieved with tramadol 50mg Q6 PRN.

resulting in incomplete relief. On month nine, he reported that he had been taking extra-strength Tylenol and hydromorphone (2mg) daily – prescribed by his PCP for

reported “post-operative pain.” At his one-year follow-up he continued to endorse tension, pressure, and paresthesia in his genital area. He further revealed that he had been experiencing what he felt to be “penile pain” characterized by burning throughout what he could feel as his penis. He confirmed continuing to take hydromorphone, at the discretion of his PCP.

In virtue of the medication-refractory nature of his phantom limb pain (PLP), our patient was subsequently referred for physical therapy. Physical medicine treatments focused on neuromuscular reeducation utilizing biofeedback. Additional techniques included pudendal nerve glides, pelvic floor myofascial release, muscle relaxation, and soft tissue mobilization. Following six treatment sessions and home therapy, our patient reported full resolution of pain, tightness, and paresthesia.

Discussion

In 1811 Scottish surgeon Charles Bell proposed a novel distinction between motor and sensory nerve roots. His example was a man who experienced phantom penile sensation following penectomy [2]. In fact, documentation of this phenomenon has been present, albeit anecdotally and without much frequency, throughout the past two centuries. When it has been documented, phantoms have been more commonly associated with arousal resulting in the sensation of erection [3-5]. To the dismay of a likely unreported many, the result of penectomy is often far more harrowing.

Proposed mechanisms for phantom limb pain include alterations peripherally in damaged free nerve endings and centrally through spinal nerve changes and cerebral remodeling. Post-operative neuroma formation secondary to neural tissue regrowth and tangling has been related to Residual Limb Pain. Instances of PLP have also been resolved with removal of neuromas [6] lending credence to this theory. At the level of the spinal cord, enhanced nociceptive input following peripheral nerve injury has been attributed to variety of mechanisms; these include down-regulation of opioid receptors [7] and increased expression of substance P, a neuropeptide associated with the inflammatory response that has the capacity to convert unrelated nerve fibers to transmitters of nociceptive information [8]. Reorganization at the level of the cerebrum, both cortical and subcortical, is commonplace in amputees, and discoveries regarding the change process have significantly aided in the treatment and understanding of PLP. Biochemical and neuronal reassignment follow amputation and are subsequently reinforced by structural modifications. Hyperexcitability via increased excitatory signaling and disinhibition is especially profound in PLP amputees [9].

Restricted somewhat by the nature of this amputation, conventional PLP treatment strategies including residual limb mirror therapy and prosthesis use were not practical for our patient. Use of liberal perioperative analgesia and targeted PLP treatment with opioids and topical lidocaine – all of which have both been shown to be beneficial in the PLP literature [1, 10]-failed to produce sustainable resolution in this case. As the result of symptom persistence, our patient underwent physical therapy, utilizing an established management approach for chronic PLP including biofeedback, progressive muscle relaxation, and psychological support [11]. Our patient achieved full resolution of his symptoms and has since returned to the majority of his pre-operative activities of daily living.

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