An atypical case of nephrolithiasis with transient remission of symptoms following spinal manipulation

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Received 2 October 2009; received in revised form 7 January 2010; accepted 3 February 2010

Key indexing terms:

Spinal manipulation;
Renal calculi;
Nephrolithiasis;
Chiropractic

Abstract

Objective: Nephrolithiasis is a common condition with symptoms similar to common mechanical lesions of the lumbar spine and pelvis. The purpose of this report is to outline a case of nephrolithiasis that closely mimicked sacroiliac joint syndrome in subjective report, objective findings, and reduction of symptoms with spinal manipulation.

Clinical Features: A 41-year-old obese male patient with mild pain over the left posterior sacroiliac joint, penile paresthesia, and the penile sensation of urinary urgency presented for chiropractic care. Subjective history and objective evaluation suggested sacroiliac joint syndrome.

Intervention and Outcome: A trial of conservative management including spinal manipulation was initiated. Following each treatment, the patient reported temporary relief of all symptoms (4 hours to 2 days). After unsuccessful permanent resolution of symptoms, a urinalysis was performed; and a follow-up computerized tomography scan revealed a large renal calculus obstructing the left ureter. Laser lithotripsy produced obliteration of the stone and complete resolution of symptoms.

Conclusions: This report outlines the potential overlap of symptoms of visceral and somatic lesions in both presentation and response to care. In this case, a favorable response to spinal manipulation masked the most likely underlying symptom generator. This encounter demonstrates the potential need for further clinical examination in the instance of the unresponsive mechanical lesion. This report also supports the need for future research into spinal manipulation as a possible adjunct for visceral pain management.

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Introduction

Nephrolithiasis, commonly referred to as kidney stones or renal calculi, is a common ailment in the adult population, with a lifetime prevalence of 2% to 5% and an approximately 12% lifetime risk for white males.^{1,2} Nephrolithiasis are 2 to 3 times more common in males

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and have a 50% recurrence rate.^{2,3} A common acute symptom of nephrolithiasis is flank or lower back pain, prompting some patients to seek chiropractic care. In a typical case of nephrolithiasis, the patient presents with telltale signs that when noted on subjective history and objective evaluation will induce an appropriate referral. Sacroiliac joint (SIJ) syndrome is a common condition that typically presents with pain over the affected joint, often with referral into the posteriolateral thigh, groin, or scrotum/labia.⁴

The following report outlines a case of nephrolithiasis that closely resembled SIJ syndrome and temporarily responded to spinal manipulation and physiotherapy. A review of the chiropractic and allopathic literature revealed atypical nephrolithiasis symptoms including inguinal and periumbilical pain.⁵ Although penile pain is a reported symptom of nephrolithiasis, penile paresthesia has not been reported in the literature.¹ Several authors discuss viscerosomatic pain in relation to spinal manipulation.⁶⁻⁸ To our knowledge, this is the first reported case of nephrolithiasis that closely mimicked a common mechanical lesion in both clinical presentation and response to therapy.

Case report

A 41-year-old white man who was a previous patient presented with a new problem. He noted a 2-week history of mild left posterior “hip pain” and described a constant “electric” or “buzzing” sensation in his penis that he noted was most akin to the penile sensation of urinary urgency. Movement was palliative for the hip pain. Urination reduced the penile paresthesia. Prolonged sitting was provocative for both problems. The patient denied recent fever, chills, nausea, vomiting, or painful urination. He also denied the presence of blood, foul smell, or color change of urine. His pain level measured 3 cm out of 10 cm on the visual analogue scale and was described as “dull” and “achy.” Relevant history included previous kidney stones and obesity. The patient noted that on annual physical examination 3 weeks prior, he had a “normal” urinalysis; and a review of his medical records confirmed his report.

The patient’s vital signs were normal. The patient’s weight was 351 lb and his height was 71 in. Neither deep abdominal palpation nor Murphy’s punch test elicited pain. Active lumbar range of motion was full with end range pain in the left sacroiliac region with extension. Yeoman test proved mildly provocative on the left for SIJ pain. The Valsalva maneuver produced

an increase in penile paresthesia and no change in back pain. Restriction was noted bilaterally in SIJ intersegmental motion. All other physical examination findings were unremarkable.

Differential diagnosis included SIJ dysfunction, prostatitis, nephrolithiasis, and a lumbar disk lesion. Further questioning revealed “normal” prostate examination and prostate specific antigen level 3 weeks prior. Based on the recent negative laboratory test results, objective findings, and subjective history that movement was palliative and sitting was provocative, a trial of conservative care was initiated to address probable SIJ dysfunction. Treatments included drop table manipulation for SIJ restriction and flexion distraction manipulation of the lower lumbar spine for potential lumbar disk lesion. In addition, hot moist packs and interferential therapy over the lumbosacral region were used for relaxation and pain management. Finally, home lumbar strengthening and stability exercises were recommended daily. The treatment frequency was twice weekly for 3 weeks.

After each treatment, the patient reported immediate resolution of both SIJ pain and penile paresthesias. Relief lasted from 4 hours to 2 days before the symptoms returned. At the end of the 3-week trial, the patient’s condition remained unchanged with only intermittent relief of symptoms following care and occasional periods where the patient felt that the SIJ pain was “worse.” A literature search was conducted to further explore this case. Several case studies were recovered reporting nephrolithiasis with associated penile, periumbilical, and inguinal pain. Based on the retrieved articles and the lack of permanent symptomatic resolution, a visceral etiology was revisited. A dipstick urinalysis was performed, and the test results indicated the presence of blood and elevated specific gravity. Follow-up urinalysis confirmed these findings, and an abdominal/pelvis computerized tomography scan was ordered. The computerized tomography scan revealed a 7-mm × 4-mm calculus lodged in the left distal ureter. Laser lithotripsy was performed to obliterate the stone. After a brief recovery from the procedure, the patient reported no further SIJ pain or penile paresthesia.

Discussion

The patient provided written consent to publish this case. Although perceived somatic pain of visceral origin is common, it is difficult to treat.⁹ This case was unique in both clinical presentation and response to

therapy. Presenting symptoms of penile paresthesia and posterior hip pain appear to be a unique presentation of nephrolithiasis. Although authors have documented inguinal and penile pain associated with renal disease, no literature describing penile paresthesia associated with nephrolithiasis was located.^{1,5}

After the initial evaluation, the clinical picture was not particularly clear with both somatic and visceral disease on the list of potential causes. Orthopedic assessment was complicated by the size of the patient; reproducing symptoms of a mechanical nature while excluding pain of visceral origin was difficult. The trial of conservative care was initiated based on a “most likely” scenario supported by recent (3 weeks prior) normal urinalysis and prostate examination result. Symptomatic resolution after each treatment bolstered the diagnosis of SIJ dysfunction. However, permanent symptom resolution following lithotripsy obliteration of the stone suggested that the most likely symptom generator was the presence of the nephrolithiasis. There are several possible explanations for the reported relief of symptoms following manipulation. Spinal manipulation has been shown to inhibit the production of proinflammatory cytokines by increasing the production of interleukin-2, potentially reducing both somatic and visceral pain.⁸ Spinal manipulation also appears to provide neurologic stimulation of mechanoreceptors (Golgi tendon organs and muscle spindles) supplied by Ia sensory fibers that can participate in “pain gating” and somatosomatic and somatovisceral reflexes.⁷ Another possible explanation for the patient’s symptomatic relief is concurrent SIJ syndrome and nephrolithiasis with concurrent resolution. Finally, the placebo effect could explain the perceived relief of symptoms.¹⁰

Although the symptom generator in this case proved to be visceral in nature, the patient had transient elimination of all pain and paresthesias following spinal manipulation. This case supports the need for future research into spinal manipulation as a possible adjunctive therapy for visceral pain management. This case is important from a diagnostic perspective because it provides evidence that perceived somatic pain of visceral origin may be potentially influenced by manual therapies, which may complicate the diagnostic process.

Limitations

This report has several limitations. This case was a single patient with both a unique presentation and unique response to therapy. These qualities make any definitive conclusions or comparisons to other cases

difficult. In addition, the symptomatic resolution was strictly subjective, with no objective observations noted. Objective reevaluation following treatment may have provided additional insight.

Conclusion

The presenting symptoms in this case mimicked a common mechanical lesion that is often treated conservatively. Penile paresthesia appears to be an uncommon but possible symptom associated with renal calculi. Although the cause of the symptoms was discovered to be visceral in origin, spinal manipulation appeared to provide short-term symptomatic relief. This case demonstrates that symptom reduction with spinal manipulation does not necessarily indicate that the pain is of somatic origin. Exploration of potential pain of visceral origin may be necessary in cases of apparent somatic pain even if the symptoms are temporarily relieved with manual therapy.

Acknowledgment

The authors give special thanks to Dr Gregory Cramer and Dr Thomas Grieve for reviewing this manuscript and for their valuable input.

Funding sources and potential conflicts of interest

No conflicts of interest were reported for this study. The author received salary support from the National Institutes of Health/National Center for Complementary & Alternative Medicine Award, Number R25 AT002872, project title: Curriculum Development in Evidence Based Practice.

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