Open Journal of
Clinical & Medical
Case Reports

Volume 2 (2016)
Issue 3

ISSN 2379-1039

Postpartum Stress Urinary Incontinence: Conservative Management and Surgical Intervention in Two Case Reports

Taylor D; McBride N; James RL*; Mahajan ST

***James RL**

Division of Female Pelvic Medicine and Reconstructive Surgery, Departments of Urology and OB/GYN, University Hospitals Case Medical Center, USA.

Tel: 216-8448570; Email: Rebecca.James@UHhospitals.org

Abstract

Postpartum SUI can present with a spectrum of severity in symptoms, exam findings, and proposed etiologies. Likewise, the treatment can range from conservative to definitive surgical management. Two case reports are presented and compared in their differing presentations and treatment plans for postpartum SUI.

Keywords

Postpartum incontinence management

Abbreviations

FI: Fecal Incontinence; FPMRS: Female Pelvic Medicine and Reconstructive Surgery; PFPT: Pelvic Floor Physical Therapy; POP: Pelvic Organ Prolapsed; SUI: Stress Urinary Incontinence; TENS: Transcutaneous Electrical Nerve Stimulator

Introduction

Stress urinary incontinence is quite common during pregnancy, with symptoms reported in half of all pregnant women [1a]. For some women, symptoms may persist well into the postpartum period and may cause significant psychological distress, including an increased incidence of postpartum depression [5a].

Stress urinary continence has been theorized to rely on both: structural support of the pelvic floor musculature and connective tissue and a functional sphincter mechanism. Neuromuscular innervation by the pudendal nerve to the urethra and bladder is also paramount to continence. Vaginal delivery has been shown to injure these components and is associated with a significant increase in prevalence of stress urinary incontinence (SUI) [2a]. In cases of structural pathology, pelvic floor defects such as cystoceles rotate the urethra downward and outward. During a stress event such as coughing, pressure will be applied differently to the urethra and bladder, causing the patient to leak. Injury to the pudendal nerve results in decreased somatosensory evoked potentials which can result in atrophy of the external urethral sphincter, as well as the external and internal anal sphincters [3a]. Trauma is most likely to be incurred during the second stage of labor, with risk factors of prolonged second stage, heavier baby and operative vaginal delivery [1a].

These case reports discuss two patients with postpartum stress urinary incontinence. They demonstrate the unique functional and structural contributions of SUI and the spectrum of management, including conservative management and surgical intervention.

Case Reports

Case 1

A 35-year-old gravida 3 para 2 presented with concerns of stress incontinence and perineal heaviness for five weeks following an uncomplicated spontaneous delivery. She reported urinary incontinence with minimal activity, which resulted in a constant dribble of urine. She denied feeling the urge to urinate, having no warning prior to incontinence. She reported occasional fecal incontinence of loose stool. She noted heaviness and numbness in her labia bilaterally as well as her clitoris. Emotionally, she reported frustration with the persistence of these symptoms several weeks after delivery. Her obstetric history was significant for one prior cesarean section, and she felt regret regarding her decision to attempt a trial of labor. Her delivery required episiotomy for non-reassuring fetal heart tones. No vacuum or forceps were applied. Pelvic examination revealed a well-healed episiotomy with no evidence of pelvic organ prolapse, but decreased sensation bilaterally over the labia majora and clitoris.

She was diagnosed with a bilateral pudendal nerve injury, and she began pelvic floor physical therapy (PFPT) and transcutaneous electrical nerve stimulator (TENS) unit use to improve neuromuscular function and prevent pelvic floor atrophy. Two weeks later in clinic, she reported improvement in symptoms, and by nine weeks postpartum she reported the ability to run on a treadmill with minimal leakage, although she continued to feel numbness. She planned to follow up in a month, and if symptoms persisted beyond 12 weeks postpartum, urodynamic testing may be pursued.

Case 2

A 26-year-old primipara presented 14 months postpartum to our clinic with complaints of incontinence and a vaginal bulge. Since delivery she reported urinary leakage with activity, coughing, laughing or sneezing. The patient also noted four to five episodes of fecal incontinence of liquid and solid stool. She also reports a strong urge with bowel movements but had episodes of fecal incontinence with stress and urge. Her obstetrical history included one vaginal delivery with episiotomy with extension to a fourth degree perineal laceration. Pelvic examination revealed a well-healed repair, but she did have stage 3 anterior-apical prolapse as well as a stage 2 rectocele. POP-Q revealed Aa 1.5, Ba 1.5, C 0, Ap -1, Bp -1. The patient was counseled on diagnosis and referred to a colorectal surgeon for fecal incontinence evaluation. Evaluation of fecal incontinence revealed physical exam findings consistent with full thickness prolapse on rectal exam with propulsion. Endorectal ultrasound showed decreased internal anterior sphincter and intact posterior lateral levator plate. Urodynamic testing revealed SUI.

She was counseled on multiple treatment options including conservative and surgical options. Physical therapy, biofeedback, cognitive behavior therapy and pessary use for prolapse were discussed in detail with the patient. Given the patient's young age conservative management was initially considered ideal and discussed at length; however; she and her husband were definitive about no future children. The husband had already undergone a vasectomy. Definitive surgical intervention was decided.

The surgical intervention was combined with the colorectal surgeon and included: laparoscopic

supracervical hysterectomy, bilateral salpingectomy, laparoscopic sacrocolpopexy with mesh, midurethral sling, cystoscopy, and laparoscopic rectopexy. The patient's postoperative course was uncomplicated, and she was discharged home on post-operative day two.

Discussion

The first case is an example of postpartum SUI with likely contributions of pudendal nerve neuropraxis, as per the physical examination demonstrating perineal numbness associated with pure stress incontinence. She achieved an excellent response with conservative management alone, with near complete return of continence over the course of 9 weeks. PFPT in addition to biofeedback and electrical stimulation likely maintained pelvic floor strength. Neurologically, resolution of the neuropraxis was considered to have gradually occurred with time and conservative monitoring.

It can be speculated that the second case's SUI had contributions from pelvic ligament and endopelvic fascia support trauma from her vaginal delivery. Relaxation of the pelvic floor ligaments, have historically been discussed in the literature as causing postpartum pelvic organ prolapse. More recent literature also suggests changes to the urethral ligaments after childbirth also contribute to SUI. VanVeelen et al recently published a prospective observational study that evaluated nulliparous pregnant women at 12 and 36 weeks gestational age, as well as six months postpartum for symptoms of SUI. Symptoms were assessed and transperineal ultrasound examination was performed [1]. Their results concluded that after childbirth women with SUI had a significantly more caudal and dorsal position of the bladder neck on valsalva than women without SUI [1]. These conclusions are consistent with findings by Chan et al that also evaluated pelvic floor biometry during singleton pregnancy. Their results form a prospective observational study also revealed that risk factors for SUI were descent of the bladder neck and increase in hiatal area at pelvic floor contractions [2].

Delancey and colleagues performed a case control study with group matching involving 80 primiparous females with self-reported new stress incontinence 9 to 12 months postpartum. Urethral and vesical neck mobility as well as sphincter anatomy and mobility were evaluated [3]. Results reported showed vesicle neck movement increased in incontinent women when compared to continent women [3].

Treatment

SUI may be treated conservatively, with the option of surgery reserved for patients in whom conservative treatments have failed to satisfactorily relieve symptoms and when the patient wishes further treatment in an effort to achieve continence. Serati et al in 2008 published results from a prospective study that assessed risk factors for pelvic floor dysfunction after delivery. The study reported urinary incontinence can effect 27.4 % of parous women at six months postpartum, with a small proportion of women having spontaneous resolution [7]. Of those 27 percent of women who complained of de novo urinary symptoms 53 percent specifically complained of SUI. The study also reported, that women with urinary dysfunction at 9 months postpartum is strongly predictive of urinary symptoms 10 yrs later [7]. This is consistent with the Viktrop study showing that 6% of women persist to have urinary incontinence at 3 months postpartum, but 30% of that group will still be leaking 5 years later [8]. In conclusion, the Serati, et al. group suggested women with urinary incontinence at six months postpartum should be considered indicated for diagnostic and therapeutic intervention [7].

Observational studies have shown approximately half of patients with stress urinary incontinence from 0-8weeks postpartum following spontaneous or assisted vaginal delivery noted spontaneous resolution by 17-24 weeks postpartum. This trend of spontaneous improvement was not observed after cesarean delivery [9a]. While future fertility is not a contraindication to surgery, it is preferable for a patient to have completed childbearing prior to pursuing surgery for SUI [8a].

The effect of pelvic floor exercises, first described by Kegel in 1948, has been recently reviewed in a Cochrane review of twenty-two trials involving a total of 8485 women. Antenatal initiation of PFMT has been shown to reduce the incidence of postpartum stress urinary incontinence by an average of 30%. An additional 40% of women showed resolution of postpartum SUI after initiation of PFMT [4a]. Biofeedback and neuromuscular electrical stimulation, using intravaginal and surface electrodes, have also been used to strengthen the pelvic floor postpartum, often as an adjunct to PFMT [6a, 7a].

Surgical interventions for SUI can be divided into four categories including: midurethral slings, retropubic urethropexy, urethral bulking agents, and artificial sphincters [5]. Urethral bulking agents are typically reserved for patients whose urodynamics show intrinsic sphincter deficiency (ISD). An artificial urinary sphincter (AUS) is a treatment option for recurrent stress urinary incontinence; although women only comprise 9% of all AUS implantations [6]. The Royal college of Obstetricans and Gynaecologists and National Institute for Health and Clinical Excellence in 2013 concluded that despite high success rates of 84% -100%, AUS should be considered only as an alternative for women whom previous surgery have failed due to high associated morbidity [6]. The American College of Obstetrics and Gynecology practice bulletin recommends conservative measures as first line therapy in SUI with consideration for surgical treatment if these fail [8a] The National Institute for Health and Care Excellence Guidelines recommends synthetic midurethral slings, open retropubic urethropexy or autologous rectus fascial slings as first line surgical therapy [5]. Currently retropubic mesh sling procedures are the most common type of surgery performed to correct SUI [5].

Periurethral injections of bulking agents can be used for ISD and recurrent incontinence. Subjective cure rates are minimal reported at thirty-five percent, and repeat injections are needed to maintain a favorable effect [8].

Conclusion

In conclusion, postpartum urinary incontinence can present with a spectrum of severity in symptoms, physical exam findings, and proposed contributing etiologies. Likewise, the treatment of postpartum stress urinary incontinence can range from conservative to definitive surgical management depending on the patient's presentation. A thorough knowledge of various treatment options appropriate for the postpartum incontinent patient can aid the provider in recommending a care plan depending on the milieu of the presentation and the patient's future childbearing plans.

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Manuscript Information: Received: October 12, 2015; Accepted: February 08, 2016; Published: February 11, 2016

Authors Information: Taylor D[1]; McBride N[2]; James RL[2*]; Mahajan ST[3]
[1]Department of OB/GYN, Akron General Hospital, USA
[2]Department of OB/GYN, University Hospitals Case Medical Center, USA
[3]Division of Female Pelvic Medicine and Reconstructive Surgery, Departments of Urology and OB/GYN, University of Hospitals Case Medical Center, USA

Citation: Taylor D, McBride N, James RL, Mahajan ST. Postpartum stress urinary incontinence: conservative management and surgical intervention in two case reports. Open J Clin Med Case Rep. 2016; 1077

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