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Pelvic Organ Prolapse in Female Patients Presenting to Transitional Urology Care Clinic

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Abstract

Purpose—Patients with congenital genitourinary abnormalities are growing into adulthood and their expectations, especially in the areas of sexual function and fertility are creating unforeseen challenges for health care providers. We review the incidence and management of pelvic organ prolapse at our Transitional Urology Clinic.

Materials and Methods—This study is a retrospective chart review of the presentation and treatment of patients with clinically bothersome pelvic organ prolapse seen at our tertiary Transitional Urology Clinic during 2012 to 2015.

Results—Seven patients with a mean age of 22.8 years presented to our clinic with clinically bothersome prolapse. Four patients had myelomeningocele, 2 had sacral agenesis and 1 had bladder exstrophy. All were on self-catheterization. Three patients were sexually active and 1 had an intact uterus and desired fertility. Bothersome symptoms included vaginal bulge in 6 cases, difficult vaginal intercourse in 1 and difficult catheterization in 1. For the leading edge of Bp (anterior compartment) prolapse the median POP-Q (Pelvic Organ Prolapse Quantification System) stage was 3 (range 1 to 3), for Bp (posterior compartment) prolapse it was 1 (range 0 to 3) and for C (vaginal vault or cervical) prolapse it was 2 (range 1 to 3). Management included pessary in 1 case, hysterectomy with bilateral uterosacral ligament suspension in 4, sacrocolpopexy in 1 and observation in 1. Mean followup was 17.6 months (range 1 to 92). One of the 5 patients treated with surgical intervention had recurrence in the anterior compartment and vaginal vault.

Conclusions—Females with congenital genitourinary anomalies present with pelvic organ prolapse at a much younger age and a more advanced stage. There is a paucity of literature on the epidemiology, presentation and management of pelvic organ prolapse in this patient population.

Keywords

abnormalities; female; pelvic organ prolapse; reconstructive surgical procedures; tertiary healthcare

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PATIENTS with congenital genitourinary malformations are surviving into adulthood at higher rates than ever before. They pose unforeseen challenges in the fields of urology and urogynecology, specifically in regard to sexual function, fertility and pelvic health. In the past patients with myelomeningocele were largely treated in the pediatric sector due to their foreshortened expected life span. However, with improvements in early care at least 75% of patients with myelomeningocele are reaching young adulthood.[1] This population presents a unique medical challenge to the provider due to complex anatomy, extensive surgical history, unique emotional and psychological needs, and the lack of consensus and evidence-based research driving best practice.[2,3]

The unique needs of this patient population require specialized knowledge of pediatric urology and the associated congenital malformations as well as treatment goals pertinent to adult urological care, including fertility, sexuality, pelvic health and family planning.[4] Challenges exist to bridge the needs and knowledge of the pediatric and adult urological fields to address the specialized treatment goals and requirements for this unique population in transition. These patients lead increasingly autonomous lives with up to 30% with spina bifida living independently and up to 23% entering matrimony.[5] This increase in societal participation is accompanied by changing expectations about the scope of functionality needed to attain a meaningful life, such as urinary and bowel continence, fertility and sexual options.

POP is a prevalent problem in the field of female urology and urogynecology. More than 41% of women who present to the general gynecologist have underlying prolapse.[6] This condition has profound effects not only on functional status and urinary continence but also on sexual function with many women giving up sexual activity altogether.[7] Little information has been gathered about the prevalence, demographics and effects of POP in the female transitional patient. We retrospectively reviewed the presentation and treatment of female patients with clinically bothersome POP seen at our tertiary care Transitional Urology Clinic.

MATERIALS AND METHODS

This is a retrospective review of the records of female patients who presented to the Transitional Urology Clinic at Houston Methodist Hospital with symptomatic POP from 2012 to 2015. A total of 43 eligible females who presented were identified for the study. Demographics and urological care characteristics were reviewed, including patient age, number of visits per year, neurological and urological diagnoses, previous genitourinary surgeries, number of urinary tract infections per year, sexual activity and parity, mode and method of CIC, coexistence of fecal or urinary incontinence and current management with anticholinergic medication, intravesical injection of botulinum toxin, urodynamic studies and upper tract imaging. Neurological diagnoses included bladder exstrophy, sacral agenesis and caudal regression syndrome, and myelomeningocele.

We reviewed the leading edge of the POP compartments, including Ba, Bp and C prolapse in all patients with the added complaints of urinary incontinence (urge or stress incontinence), recurrent urinary tract infections and incomplete bladder emptying. The degree of prolapse

was measured using the accepted POP-Q examination accepted by ICS (International Continence Society), AUGS (American Urogynecologic Society) and SGS (Society of Gynecologic Surgeons).[8] For each compartment the leading edge was measured with respect to the hymen and staged based on POP-Q staging as previously described, including stage 0—no prolapse, stage 1—leading edge less than −1 cm, stage 2—leading edge −1 cm or greater but +1 cm or less, stage 3—leading edge greater than +1 cm but less than +(total vaginal length −2) cm and stage 4—leading edge +(total vaginal length −2) cm or greater. Management plans were identified, and followup, outcomes and complications were recorded.

RESULTS

Currently 77 patients are registered at our Transitional Urology Clinic. Table 1 shows detailed demographics on 40 female patients in our clinic with and without POP followed at the clinic from 2012 to 2015. Seven female patients (21.2%) with an average age of 25 years (range 20 to 38) were identified for inclusion in this study due to bothersome POP. For patients who presented with POP the average number of visits to the clinic per year was 3.4 (range 2 to 6). Neurological diagnoses in these 7 patients consisted of myelomeningocele in 4 (57.1%), sacral agenesis and caudal regression in 2 (28.6%) and bladder exstrophy in 1 (17.3%).

At presentation all 7 women depended on CIC to manage bladder dysfunction. Six women catheterized through a continent stoma and 1 catheterized through the native urethra. All women who performed CIC through a stoma were continent of feces and urine. However, the patient who catheterized through the native urethra reported urinary incontinence. One study patient was employed and 3 reported being sexually active. Two patients had been pregnant and each delivered 1 child successfully, including 1 by cesarean section and the other by spontaneous vaginal delivery. One of the nulliparous patients has an intact uterus and desires continued fertility as a central feature of the management plan.

Bothersome POP symptoms reported by the 7 patients include a palpable vaginal bulge in 6 (85.7%), dyspareunia in 1 (14.3%) and difficult catheterization in 1 (14.3%). One patient had dyspareunia and a vaginal bulge. The degree of prolapse varied, including median anterior compartment prolapse stage 3 (range 1 to 3), median posterior compartment prolapse stage 1 (range 0 to 3), and median vaginal vault and cervical prolapse stage 2 (range 1 to 3). Patients were evaluated only in the lithotomy position.

Prolapse management was tailored to meet individual patient medical needs, anatomy and desire for future fertility. Table 2 lists urological diagnosis and prior surgical treatments in our patients. For the nulliparous patient desiring future fertility, who was a heavy weight lifter and physically active, a pessary was fitted and placed instead of surgical management (1 of 7). Another nulliparous patient with an intact uterus elected observation. Surgical management for POP in the other patients included hysterectomy and uterosacral ligament suspension in 4 of 5 (80%) and robot-assisted laparoscopic sacrocolpopexy in 1 of 5 (20%). For these procedures average followup was 82.8 weeks (range 4 to 374).

Mean followup after POP intervention was 17.6 months (range 1 to 92). At the last followup all patients were examined but POP-Q data were not available. Patient 4, who was 1 of the 5 patients who underwent surgical intervention for POP, had recurrent prolapse in the anterior compartment (Aa, +1) and vaginal vault (C, +1). No post-intervention complications were reported in the group.

DISCUSSION

The urological community is now confronted with the challenges of a new and growing population of transitional patients with congenital genitourinary abnormalities who are aging into adulthood. Prior to 1960 only 10% of pediatric patients with myelomeningocele were expected to survive into adulthood. Now with continued advancements in medical and surgical management up to 75% to 85% of these patients are reaching young adulthood.[9,10]

As they age these patients are facing adult urological problems. In a study of transitioning patients with myelomeningocele it was found that 85% were experiencing urological problems and an even greater number (97%) required tailored urological intervention.[11] Thus, with this maturing patient population comes the increased need for responsible transitional care that attempts to bridge the gap between pediatric and adult management in specific areas such as fertility and sexuality along with POP. The transitional patient requires a multifaceted approach combining medical and surgical care with additional educational, emotional and psychological support. Our study aims to open the discussion about the unique medical challenges faced by transitional urology patients through the specific lens of POP.

For the female population at large POP is a common and bothersome urological complaint. However, its presentation in our population poses unique challenges to this common condition. In the general population the average age of patients with POP has bimodal peaks at 46 and 71 years but our cohort is presenting as a much younger group at a mean age of 26 years.[12]

In 2000 Swift reported the degree and stage of POP in the general female population in North America who were seen at outpatient gynecology clinics for routine health care.[13] A total of 497 patients with an average age of 44 years were examined and only 2.6% were found to have stage 3 POP. Swift also identified variables such as advancing age, increasing gravity and parity, increasing number of vaginal births, hypertension and post-menopausal status that were associated with more clinically significant POP. However, transitional patients are presenting with prolapse in the absence of normal precipitants such as spontaneous vaginal delivery. In our cohort specifically only 1 patient had experienced a vaginal delivery prior to prolapse presentation. This then begs the question of the risk factors that make this patient population susceptible to prolapse at a much younger age. Some explanations may include an extensive and complicated pelvic surgical history at a young age, greater atrophy or distortion of the pelvic floor support due to the neurological complications of the disparate diseases and the pelvic abnormality itself such as exstrophy. The substantial abdominal straining and pelvic pressure associated with patient transfer and bowel movements could be contributing factors as well.

Another area of concern for this transitional patient population is the more advanced stage of prolapse. The median stage of prolapse was 3 in the anterior, 1 in the posterior and 2 at the vault/cervical compartments. More research is required to identify epidemiological aspects of POP with regard to its pathophysiology, prevalence and presentation in this patient population. In addition, more research is needed to explore the ramifications and longevity of early management of prolapse in these patients. In our cohort only 1 of the 5 patients who underwent surgical treatment returned with recurrent prolapse.

The earlier presentation of prolapse also highlights longer term issues related to fertility and sexual function. More research is currently being done to look at the sexual goals in this patient population with sexual intimacy reported in as many as 60% and up to a quarter participating in sexual intercourse.[14] However, satisfaction with sexual function remains a challenge. One study showed that 51% of patients with myelomeningocele reported that sexual life was a failure.[15] To complicate the picture it was found that patients with spina bifida who had urinary incontinence were less likely to be sexually active than their peers.[16]

In our cohort 43% of patients reported being currently sexually active and 1 cited dyspareunia as the presenting symptom for prolapse. More research is needed to fully understand the effects of congenital genitourinary malformations on future fertility. Two of our patients have completed successful parturition. For these patients continued discussions regarding fertility as well as sexual function are not only important for coordinated management plans but also highlight the need to bring these patients into an adult care setting. Considering patient goals for fertility and sexual function will continue to drive surgical management decisions. In our cohort 1 patient desired future fertility and a pessary was offered to manage POP.

Overall the epidemiology, presentation and comprehensive treatment of transitional urology patients with prolapse is an increasingly common issue that requires further research. Our specific study has some limitations that are important to identify. As a retrospective chart review there were flaws inherent in the chosen study design, including the lack of validated questionnaires to quantify pelvic floor symptoms and detailed POP-Q measurements postoperatively. Since this initial review is descriptive in nature, it would benefit from an additional cross-sectional study to identify the overall prevalence of prolapse in this population or a cohort-case study to further examine the precise etiologies associated with early prolapse. Additionally the limited sample size serves to elucidate the emerging challenges in this field. As a novel sample set it will be important to track the progress of these patients with time to better understand the long term durability of prolapse management and its effects.

Overall our review is meant to stimulate and encourage further research into the specific risks, presentation and treatment of transitional patients with POP. It is of paramount importance that we continue to develop evidence-based guidelines for the treatment of these patients and continue to focus on an interdisciplinary approach to address the maturing needs of this complex population.

CONCLUSIONS

There is increasing need for future research into the presentation, evaluation and management of POP in the maturing population of patients with congenital genitourinary malformations. These patients present with POP at a younger age and at more advanced stage. The unique treatment problems represent a challenge based on complex pelvic anatomy with an extensive history of prior genitourinary surgeries in many cases. Further interdisciplinary research in the fields of female urology, urogynecology and female pelvic floor reconstructive surgery is required to address the needs of this growing population.

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Abbreviation and Acronym

CIC	clean intermittent catheterization
POP	pelvic organ prolapse

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Table 1

Patient population demographics

POP	
No. pts	7
Av age (range)	25 (20–38)
Followup (mos)	6.3
No. visits/yr	3.4
No. neurological diagnosis:	
Myelomeningocele	4
Sacral agenesis	2
Bladder exstrophy	1
No. bladder management at presentation:	
CIC	7
CIC, continent stoma	6
CIC, native urethra	1
Anticholinergic medication (oxybutynin)	3
Botox® injections	3
No. urodynamics	4
No. renal ultrasound or computerized tomography	4
No. sexual history:	
Sexually active	3
Prior pregnancies	2
Prior deliveries	2
Cesarean delivery	1
Spontaneous vaginal delivery	1
No. POP (presenting symptom):	7
Palpable bulge	6 *
Dyspareunia	1 †
Difficult catheterization	1 †
NonPOP	
No. pts	33
Av age (range)	24 (13–61)
No. neurological diagnosis:	
Myelomeningocele	22
Cerebral palsy	3
Bladder exstrophy	1
Tethered cord	1
Other (idiopathic, hypoxic encephalopathy, congenital hypotonia, congenital heart disease)	7
No. CIC at presentation	26
No. fertility (gravida/para):	
0/0	32
3/3	1

[*] One patient had dyspareunia and vaginal bulge.

[†] One of 6 patients.

Table 2

Urological diagnosis and surgical treatment of patient population

			Preop POP-Q (cm/stage)				
Pt No.	**Pelvic Floor Dysfunction**	**Prior Surgeries**	**Ba**	**C**	**Bp**	**Treatment**	**Followup (wks)**
1	POP	Augmentation cystoplasty, Mitrofanoff + open cystolitholapaxy	+2/3	+3/3	+2/3	Pessary	4
2	POP + mixed urinary incontinence	Augmentation cystoplasty, Malone antegrade continence enema/Mitrofanoff + pubovaginal sling	+2/3	+3/3	+2/3	Hysterectomy, uterosacral ligament suspension + stoma revision	8
3	POP, mixed urinary incontinence, crossed fused ectopia + chronic renal insufficiency	None	−2/1	−4/1	−2/1	Hysterectomy, uterosacral ligament suspension, augmentation cystoplasty, Mitrofanoff, bilat ureteral reimplantation + pubovaginal sling	42
4	POP	Augmentation cystoplasty + bladder neck closure	+1/2	+1/2	−3/0	Hysterectomy + uterosacral ligament suspension	374
5	POP + mixed urinary incontinence	Kropp procedure, urethral collagen + hysterectomy	+3/3	+4/3	+1/2	Robot-assisted laparoscopic sacrocolpopexy, post-colporrhaphy + pubovaginal sling	7
6	POP	Mitrofanoff	+2/3	+1.5/3	−2/1	Hysterectomy + uterosacral ligament suspension	62
7	Uterine prolapse	Augmentation cystoplasty, Mitrofanoff, pubovaginal sling + cystolitholapaxy	+1/2	0/2	−2/1	Observation	4