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Indications for surgical intervention in a postpartum pelvic floor specialty clinic

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Abstract

Objective: To determine the prevalence and type of surgical procedures undergone by postpartum women seen in a specialty postpartum pelvic floor clinic over 11 years.

Methods: This study was a retrospective chart review of patients requiring surgical intervention within a one year period after their initial visit to the Michigan Healthy Healing After Delivery (MHHAD) clinic at the University of Michigan from July 2007 through January 2019. Chart review was performed to abstract demographics, obstetric data, indication for postpartum clinic visit, primary and secondary indications for surgery, and procedures performed. Descriptive analyses were used to describe the cohort.

Results: Of the 1,138 new MHHAD patients seen during the study period, 9.1% (n=103) underwent surgical management. Anal incontinence was the primary or secondary indication for surgery in 51.5% (n=53) of women. The most common surgical interventions were anal sphincteroplasty (37.9%, n=39), perineal laceration revision (33.0%, n=34), and rectovaginal fistula repair/fistulotomy (19.4%, n=20). Of the women who had a sphincteroplasty, 61.5% (24/39) had a prior fourth-degree perineal laceration.

Conclusions: Anal sphincteroplasty was the most common surgical intervention undergone by women seen in a postpartum pelvic floor specialty clinic. Postpartum pelvic floor clinics, such as the Michigan Healthy Healing After Delivery Clinic, provide the expertise and specialized resources required to ensure the early diagnosis and treatment of pelvic floor conditions related to childbirth thus improving women's quality of life and preventing potential life-long sequelae.

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Brief Summary

This study demonstrated 9% of patients seen in a postpartum pelvic floor clinic require surgical intervention, most commonly an anal sphincteroplasty for anal incontinence.

Keywords

obstetric anal sphincter injuries (OASIS); postpartum complications; anal sphincteroplasty; postpartum clinic

Introduction

Pelvic floor disorders (PFDs) are common and U.S. women have a 20% lifetime risk of surgery for these conditions including pelvic organ prolapse, urinary, and fecal incontinence [1,2]. While older women are often considered to be the group at highest risk for PFDs, these distressing conditions also affect postpartum women. The postpartum period, or “fourth trimester,” is an opportune time for early interventions that can help prevent PFDs from becoming lifelong morbidities.

The Michigan Healthy Healing after Delivery (MHHAD) clinic, established in 2007 at the University of Michigan (UM), was the first postpartum pelvic floor clinic in the United States [3]. The goal of this subspecialty clinic is to address the unique pelvic floor needs of pregnant and postpartum women with, or at high-risk for, PFDs. Criteria for referral includes all women with obstetric anal sphincter injuries (OASIS) (i.e., third- or fourth-degree lacerations) at the time of delivery, in addition to women suffering from any pelvic floor issue within 1 year of delivery. The clinic provides education, early diagnosis, and treatment. Common conditions managed in MHHAD include routine follow-up of complex perineal lacerations and/or OASIS, delayed wound healing or other complications related to obstetric lacerations, urinary incontinence or retention, anal incontinence, pelvic organ prolapse, pelvic pain, and dyspareunia/sexual dysfunction. Our definition of ‘complex perineal lacerations’ included third- and fourth-degree lacerations but also lesser degree lacerations that were considered complex by the primary obstetrician based on the extent of the laceration (e.g., stellate vaginal lacerations, deep bilateral sulcal lacerations, clitoral or urethral lacerations, cervical lacerations). A prior study by Brincat et al looked at the first four years of the MHHAD clinic and found that 8% of women underwent some procedural intervention [3]. Since that time, our annual clinic volume has increased over 7-fold, and we now have over a decade’s worth of data. Therefore, the purpose of this study is to determine the prevalence and type of surgical procedures postpartum women seen in the MHHAD clinic over 11 years underwent within one year of their initial visit.

Materials and Methods

This study was a retrospective chart review of patients requiring surgical intervention after being seen in the MHHAD clinic at the University of Michigan from July 2007 through January 2019. This study received approval from the institutional review board at the University of Michigan (HUM00102114). New MHHAD encounters were identified using

our electronic medical records system. In order to further look at this initial cohort of women referred and capture those who underwent surgery, women were included if they had an operating room encounter within one year of their initial MHHAD visit. Surgical cases were identified by procedure codes linked to operating room encounters using our electronic medical records system. Chart review was used to determine whether the indication for their surgical procedure was related to their MHHAD visit. A single author (F.J.) reviewed all surgical cases to determine whether the procedure was associated with their prior MHHAD visit. Women were excluded if the surgery was unrelated.

Using chart review, demographic data, medical history, obstetric history, delivery characteristics, indication for MHHAD referral, and MHHAD visit diagnoses were collected. Surgical data collected included procedures performed, indications for surgery, and any preoperative non-surgical management offered or attempted.

Descriptive analyses were used to describe the surgical intervention cohort.

Results

Of the 1,138 new patients seen in the MHHAD clinic during the study period, 9.1% (n=103) underwent surgical intervention within one year following their first clinic visit. The following results apply to the surgical intervention cohort (N=103). The average age was 30.7 ± 4.9 years, the average BMI was 28.0 ± 7.0 kg/m², 83.5% (n=86) were Caucasian, 3.9% (n=4) had a diagnosis of diabetes, 4.9% (n=5) had a diagnosis of hypertension and 4.9% (n=5) were current smokers. Referral indications (synonymous with referral diagnosis) are shown in Figure 1. Nearly 40% of women were referred to the MHHAD clinic for complex perineal lacerations (38.8%, n=40). Anal incontinence and/or rectovaginal fistula were the next most common referral indication (36.9%, n=38) and pelvic pain or dyspareunia was a referral indication for nearly 1 in 5 women (17.5%, n=18). Women could have more than one referral indication. The average time from delivery to MHHAD visit was 64 days (26,160) and average time from delivery to surgical intervention was 153 days (79, 282).

Of the women who underwent surgical management, 53.4% (n=55) were primiparous, 74.8% (n=77) had a spontaneous vaginal delivery, 22.3% (n=23) had an operative vaginal delivery, and 2.9% (n=3) had a cesarean delivery. The episiotomy rate was 21% (21/100). Obstetric anal sphincter injury at either the most recent or prior delivery was reported by 64.1% (n=66) of patients, of which 56.1% (37/66) were fourth-degree lacerations. OASIS was confirmed by review of delivery records. For outside referrals, delivery records are routinely requested prior to the new patient visit.

Conservative management, including pelvic floor physical therapy, medications, or pessary, was offered or provided to 43.7% (n=45) of patients prior to surgical intervention. Anal sphincter defect and/or anal incontinence were the primary or secondary indications for surgery in 51.5% (n=53) of women (Figure 2). 'Primary' and 'secondary' indications for surgery refer to the order diagnoses were listed in the operative note.

The most common surgical interventions were anal sphincteroplasty (37.9%, n=39), perineal laceration revision (33.0%, n=34), and rectovaginal fistula repair/fistulotomy (19.4%, n=20) (Figure 3). Of the rectovaginal fistula repairs, 55% (n=11/20) had concomitant anal sphincteroplasty. Of the women who had an anal sphincteroplasty, 61.5% (24/39) had a prior fourth-degree perineal laceration. Four women presented to clinic with symptoms of fecal incontinence and with no history of OASIS in any delivery. Of the 4 women, 3 had underlying anal sphincter defects identified and underwent anal sphincteroplasty. Nearly half of women were referred from outside institutions (47.6%, n=49). The remaining referrals came from within the UM Health System, either from the Ob/Gyn residents, academic generalists, maternal fetal medicine obstetricians, certified nurse midwives, or family medicine providers.

Discussion

In this retrospective study describing surgical intervention rates and indications in the first 11 years of the original postpartum pelvic floor clinic in the United States, approximately 9% of women underwent surgical intervention. Anal sphincteroplasty was the most common surgical procedure performed, followed by perineal laceration revision and rectovaginal fistula repair. To describe some obstetric data, in 2019 the University of Michigan had 4,979 deliveries (1,467 cesarean and 3,512 vaginal deliveries). Since 2014, the annual average OASIS rate has been 3.6% which is comparable to national data [4]. Approximately 50% of new patient referrals to MHHAD are from outside institutions.

This study provides information regarding the types and prevalence of surgical procedures urogynecologists can expect to perform in a postpartum pelvic floor clinic. The typical evaluation for patients who undergo sphincteroplasty include clinical evaluation by fellowship trained urogynecologists, anorectal exam, and the use of endoanal ultrasound at times. The high rate of anal sphincteroplasty highlights the need for urogynecologists in these specialty clinics to be trained to identify persistent obstetrical anal sphincter injuries and competently perform this procedure. On a national level, data suggest the proportion of anal sphincteroplasties performed in the United States by gynecologists increased significantly from 2011 to 2015 [5]. Part of this trend may be due to the growing popularity of these postpartum pelvic floor clinics. Urogynecologists are uniquely situated to manage persistent obstetrical anal sphincter injuries given their training in obstetrics and complex pelvic floor surgery. With training, providers can learn to detect anal sphincter injuries on clinical exam and by using imaging modalities. Although rates of OASIS in the United States have decreased in the last few decades, up to 50% of anal sphincter injuries are missed at the time of delivery [6,7]. Therefore, postpartum identification and management of a persistent anal sphincter defect remains critical to treating and preventing lifelong anal incontinence, as well as counseling regarding future childbearing.

A limitation of this study relates to the fact that it is a descriptive study, and therefore does not present results regarding risk factors or outcomes for women in the surgical intervention cohort. Another limitation is that some patients may have sought surgical intervention at another institution for the management of their PFDs. It has been hypothesized the high failure rate of persistent anal sphincter defect repairs may be due to denervation from long-

standing injury or decline in sphincter function with age, where success of an initial repair is the most important factor in long-term outcomes [8]. With subacute intervention, we would expect improved efficacy of repairs. Since the inception of the MHHAD clinic, multiple other Healthy Healing-like clinics have been started throughout the country. More robust studies, perhaps involving multiple centers, could focus on mid- and long-term outcomes of postpartum women undergoing surgical procedures such as anal sphincteroplasty to better understand the postpartum time frame during which women can expect the most benefit.

In summary, nearly 1 in 10 women seen in the Michigan Healthy Healing After Delivery specialty postpartum pelvic floor clinic underwent surgical intervention. This current study identified a surgical rate of 9% which is relatively stable compared to the prior MHHAD study by Brincat et al (8%) despite a 7-fold increase in referrals. The vast majority of procedures were related to complications of obstetric lacerations with 40% of procedures being the anal sphincteroplasty. Postpartum pelvic floor clinics, such as the Michigan Healthy Healing After Delivery clinic, provide the expertise and specialized resources required to ensure the early diagnosis and treatment of pelvic floor conditions related to childbirth thus improving women's quality of life and preventing potential life-long sequelae.

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Figure 1. Indication for Health Healing Clinic

*Cosmetic appearance of vulva; retained suture from obstetrical repair

Figure 2. Primary and Secondary Indications for Surgery

*Possible retained products of conception; vaginal polyp; lysis of vaginal agglutination; labial tear; vestibulodynia

Figure 3. Surgical Procedures Performed

*Drainage of inclusion cyst; Gartner's duct cyst excision; labioplasty; D&C; vaginal polyp removal; lysis of vaginal adhesions; colposcopy; partial vestibulectomy