

“Pelvic Organ Prolapse” (2007), by John E. Jelovsek, Christopher Maher, and Matthew D. Barber

In 2007, physicians John Jelovsek, Christopher Maher, and Matthew Barber published, “Pelvic Organ Prolapse,” in *The Lancet*. In their article, Jelovsek and colleagues provided an overview of pelvic organ prolapse in women and described the epidemiology, risk factors, symptoms, and management of the condition. Pelvic organ prolapse occurs when a woman’s pelvic floor is weakened or damaged from stress or trauma such as vaginal childbirth. The pelvic floor is a group of muscles that provides support to organs within the lower abdominal region of the body. Disorders of the pelvic floor disrupt its normal function, often causing a feeling of uncomfortable pressure or pain and incontinence, which is involuntary leakage of urine or feces. In their article, Jelovsek and colleagues reviewed the known information about pelvic organ prolapse as of 2007 and research teams who further studied the causes and management of pelvic organ prolapse in women later used the article as a reference.

Pelvic organ prolapse typically occurs when the structures providing support within the pelvic anatomy become damaged. The primary support that holds the pelvic organs in place is comprised of the levator ani muscle complex. The levator ani muscle complex is a sheet of muscle that attaches to the pelvis on either side and forms the pelvic floor. That group of muscles supports many of the organs in the pelvis, including the uterus, bladder, rectum, and intestines. There are many factors that may lead to a weakening of the pelvic floor muscles, including repeated vaginal deliveries, excessive straining, and genetic or surgical damage to the connective tissue.

Jelovsek, Maher, and Barber were all practicing physicians specializing in the research and treatment of pelvic floor dysfunction at the time of the article’s publication. Jelovsek specialized in female pelvic medicine and reconstructive surgery. In his research, he estimated the risk for conditions such as pelvic floor disorders and incontinence, as well as the benefits of surgery to treat pelvic organ prolapse, in order to determine the best care for patients. At the time of publication, Barber researched diseases of the female reproductive system, focusing on surgical trials for the treatment of pelvic organ prolapse. Both Jelovsek and Barber were practicing medicine at the Cleveland Clinic in Cleveland, Ohio, at the time of the article’s publication. Maher researched the assessment and safety of treating pelvic organ prolapse using surgical interventions at Wesley Hospital in Auchenflower, Australia.

The authors of “Pelvic Organ Prolapse” split the article into seven sections, therein explaining an aspect of pelvic organ prolapse. In the introduction, the authors describe pelvic organ prolapse and the different types that can occur. Then, in the first section, titled “Epidemiology,” Jelovsek and colleagues discuss the lack of comprehensive studies reporting the number of women affected by pelvic organ prolapse. Then, in “Causes and Risk Factors,” they describe the causes of pelvic organ prolapse, and identify noteworthy risk factors such as age or obesity. In the following section, “Pathophysiology,” the authors explain what happens in a woman’s body that may lead to pelvic organ prolapse. Next, in “Clinical Presentation,” the authors describe the prolapse-related symptoms that may cause women to seek treatment, such as a feeling of pressure, bladder or bowel symptoms, and pain during sex. In “Assessment,” Jelovsek and colleagues explain the process that physicians use to assess pelvic organ prolapse in patients. Then, in “Management,” the authors describe treatment options for women experiencing pelvic organ prolapse, such as surgery. Finally, in “Prevention,” the authors describe potential methods for reducing risk factors, such as weight loss, treatment of constipation, and pelvic floor physical therapy.

Jelovsek, Maher, and Barber begin the article by providing a brief description of pelvic organ pro-

lapse while detailing the different presentations. They define pelvic organ prolapse as the descent of pelvic organs from a woman's body that results in an outward, external projection of the vagina, uterus, or both. Jelovsek and colleagues then explain that there are three types of pelvic organ prolapse, diagnosed by which area is affected. The three locations include the front of the vaginal wall, back of the vaginal wall, and uterus, which they also refer to as the apex. They also note that prolapse can result from a combination of the three types. Jelovsek and colleagues explain that the front part of the vaginal wall is the most common location to prolapse, commonly resulting in the descent of the bladder.

Continuing in that same section, the authors state that pelvic organ prolapse is one of the most common reasons for female reproductive system surgery. According to researchers J.A. Godfrey Walker and Prasanna Gunasekera, physicians often used surgery as a means to treat women with more severe symptoms, such as those that affect the genital, urinary, and gastrointestinal tracts. The authors clarify that pelvic organ prolapse rarely results in severe injury or risk of death, but that the symptoms often interfere with women's daily lives. For example, women with pelvic prolapse-related incontinence may not feel comfortable being far from a toilet, since they may experience frequent and involuntary leakage of urine or feces. As a result, the authors state that some women may feel limited in where they can go and for how long, thus interrupting women's abilities to maintain their daily routines. Jelovsek and colleagues conclude by briefly introducing the system that physicians use to measure the degree of prolapse, called the pelvic organ prolapse qualification system, or POP-Q.

In the section titled "Epidemiology," Jelovsek, Maher, and Barber explain the lack of studies providing comprehensive information about the number of women affected by pelvic organ prolapse. They state that most studies have only included women who have received clinical treatment or surgery. However, the authors explain that those studies do not provide a comprehensive view of how many women are affected, since they typically only include women who are symptomatic enough to seek treatment. The authors then state that physicians often find during routine gynecological care loss of support of the uterus or vagina in adult women, sometimes incidentally. They then provide statistics about the incidence of surgical intervention for women with the condition, noting that a woman's lifetime risk, by eighty years old, for pelvic organ prolapse surgery is about seven percent.

In "Causes and Risk Factors," the authors describe the common risk factors that increase the likelihood for women to develop pelvic organ prolapse. They state that prolapse is most likely due to multiple risk factors that accumulate over a woman's life. The authors provide a list of three of the most accepted risk factors, including a previous vaginal birth, advanced age, and obesity. They note that the number of times a woman has given birth vaginally is the strongest known risk factor for pelvic organ prolapse. That means that the more times a woman gives birth, the more likely she is to experience pelvic organ prolapse.

Also, in "Causes and Risk Factors," the authors note that there are other factors associated with pelvic organ prolapse, including pregnancy, high infant birth weight, and an age below twenty-five at the time of first delivery. However, they state that researchers had not fully connected those factors directly to an increased likelihood of pelvic organ prolapse, thus why the authors referred to them as potential factors. Jelovsek, Maher, and Barber then describe the increased prevalence of pelvic organ prolapse as a woman's age increases, stating that the rate of pelvic organ prolapse increased by forty percent for every decade of a woman's life. Jelovsek and colleagues then list additional factors researchers oftentimes correlated with an increased likelihood for women to experience pelvic organ prolapse, including hysterectomy, ethnicity, and repetitive straining of pelvic floor muscles. They state that other researchers typically linked menopause to pelvic organ prolapse, a claim the authors refuted based on a lack of evidence.

In the "Pathophysiology" section, Jelovsek, Maher, and Barber describe claim that certain damage to the structures within the pelvis may be more likely to cause pelvic organ prolapse. Jelovsek and colleagues explain that defects or injuries to the muscles comprising the levator ani muscle complex can lead to the development of pelvic organ prolapse due to a lack of support for the pelvic organs. Some of the reasons for damage to the muscles include previous vaginal births, straining caused by constipation or difficulty urinating, damage to the surrounding connective tissue, or disruption or

stretching of the tissue due to hysterectomy or aging. Additionally, Jelovsek and colleagues describe that variations in the shape and orientation of the pelvic bones can also lead to the development of pelvic organ prolapse.

The authors describe the symptoms of pelvic organ prolapse in their article's next section, "Clinical Presentation." They begin by stating that women oftentimes present with one or more symptoms, including vaginal bulging, pelvic pressure, or additional bladder, bowel, or pelvic symptoms such as incontinence or urinary urgency. Jelovsek and colleagues explain that the presence of certain symptoms does not typically indicate the severity of the prolapse. However, they state that the exception is a prominent vaginal bulge that can be seen or felt. Jelovsek, Maher, and Barber explain that a bulge is consistent with severe pelvic organ prolapse. They then describe that bowel dysfunction symptoms, such as straining, urgency, and incontinence are also common for women with pelvic organ prolapse. The final symptoms that the authors discuss are those related to sexual function. They explain that many women complain of reduced sexual function due to pelvic organ prolapse but note that previous studies had not clearly supported a connection between pelvic organ prolapse and symptoms of decreased sexual function, such as loss of libido, vaginal dryness, or inability to achieve orgasm.

In the section "Assessment," Jelovsek, Maher, and Barber explain how physicians use pelvic examinations to diagnose pelvic organ prolapse. They describe that the examination should be done in two positions, including one during which the woman lies down with her back on the table and the next during which she stands. They explain that, with both positions, the woman should alternate between bearing down to strain the pelvis and then relaxing. That enables the physician to visualize the extent and location of the pelvic organ prolapse. The authors also include that an internal exam of the uterus and the rectum can also help rule out other diagnoses. Jelovsek and colleagues then describe that physicians often use the grading system, POP-Q, to assess the severity and extent of the prolapse. They explain that physicians compare measurements of the front, back, and apical parts of the woman's vaginal walls with their relative distance from the woman's vaginal opening. They state that physicians then use those comparisons to determine the location and severity of the prolapse. The authors also mention that additional testing may only be necessary if the woman may have a coinciding condition, such as one that affects her bladder. Otherwise, they state that using POP-Q is generally sufficient for diagnosing pelvic organ prolapse.

Jelovsek and colleagues discuss three ways physicians can help women manage pelvic organ prolapse in "Management," including observation, pessary use, and surgery. The authors advise that observation and pessary use are minimally invasive methods and may be the first recommendation for women who do not present with severe symptoms. The authors generally recommend observation for prolapses that do not extend beyond the woman's vaginal opening. For other cases, Jelovsek and colleagues advise for the use of pessaries for symptomatic pelvic organ prolapse management prior to opting for surgical corrections. A pessary is a device that is inserted, non-surgically, into a woman's vagina that supports the bladder, vagina, uterus, and rectum. The authors begin by describing the historical use of pessaries, which have been used to reduce prolapse, relieve pressure on pelvic organs, and provide support. Jelovsek, Maher, and Barber also mention that there are several shapes and types of pessaries made of different materials and sizes. The wide variety gives women greater capabilities to find an option that works to alleviate their symptoms.

The final management method that the authors describe is surgery. Jelovsek, Maher, and Barber state that surgery is typically reserved for women who have symptomatic pelvic organ prolapses and choose not to or cannot use pessaries. The authors then describe two surgical techniques, reconstructive and obliterative, that physicians use to treat pelvic organ prolapse. They explain that the reconstructive approach can correct the prolapse while relieving symptoms and maintaining sexual function. They also explain obliterative surgery, which corrects the pelvic organ prolapse by replacing the pelvic viscera into the pelvis and closing the vaginal canal. That technique, Jelovsek and colleagues describe, is usually reserved for elderly women since it results in the loss of vaginal sexual function. The authors explain that the surgery type depends on the location and severity of the prolapse. Jelovsek and colleagues also mention specific studies that show the effectiveness of different surgery types, including the use of vaginal mesh, which they explain had been successful but was also associated with a high rate of complications.

In the final section, "Prevention," Jelovsek, Maher, and Barber describe the limited methods for preventing pelvic organ prolapse. They explain that, at the time, other researchers thought that possible strategies designed to reduce lifestyle risk factors included losing weight, avoiding activities that involve straining, and treating constipation. However, the authors describe that researchers had not demonstrated a connection between those strategies and reduced instances of pelvic organ prolapse. Additionally, Jelovsek and colleagues note that other researchers advocated for elective Cesarean sections to reduce childbirth-related risk factors for pelvic organ prolapse. During a Cesarean section, a surgeon delivers an infant by making incisions in the uterus and abdomen of the pregnant woman to remove the neonate. Again, the authors explain that further studies were needed to confirm that theory. Finally, the authors describe a method of pelvic floor strengthening exercises, which were successful in treating urinary incontinence and some pelvic floor disorders. However, at the time of publication, the authors found no corroborating research on the effectiveness of those exercises on preventing pelvic organ prolapse.

The publication "Pelvic Organ Prolapse," by Jelovsek, Maher, and Barber, was one of the most comprehensive reviews of known information about pelvic organ prolapse at the time of the article's publication. Other researchers used the authors' analyses for a variety of other studies, including to further study the impacts of pelvic organ prolapse on different populations or to look more closely at specific causes and risk factors for pelvic organ prolapse. One such study, "Pelvic Organ Prolapse and Incontinence in Developing Countries: Review of Prevalence and Risk Factors," by Godfrey Walker and colleagues, focused on studying pelvic organ prolapse in women from sixteen low-to-middle-income countries. Another study, "Lifetime Risk of Undergoing Surgery for Pelvic Organ Prolapse," by Fiona Smith and colleagues, addressed the prevalence of pelvic organ prolapse and the associated surgical risk. Jelovsek, Maher, and Barber's article, "Pelvic Organ Prolapse," has been used as a basis of knowledge about pelvic organ prolapse in women and enabled further research of the management and prevention of the condition.

Sources

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