Chronic Pelvic Pain
with Synthetic Vaginal Mesh and Sling

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Chronic Pelvic Pain with Michael Hibner, M.D., Ph.D and Greg Vigna M.D., J.D., Interactive PDF

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1. Anatomy of the Female Pelvis

Pelvic Organ Prolapse and Stress Urinary Incontinence Treatment

The pelvis is a complex structure in the human body. It is responsible for locomotion, evacuation, childbirth and sexual pleasure. In females, this region of the body contains the uterus, ovaries, cervix, vagina and the clitoris along with the pelvic bones, muscles, ligaments, nerves, blood vessels, bladder, urethra, colon and rectum.

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Pelvic Organ Prolapse

Pelvic organ prolapse (POP) is a type of vaginal herniation causing pelvic organs to fall inside the lumen of the vagina. The supporting muscles and tissue of the pelvic floor may have become torn or stretched because of childbirth, hysterectomy or menopause.

Not all women with pelvic organ prolapse have all of the symptoms, which can include pain, bulging of tissue or organs that protrude into the vagina, leakage of urine and sexual difficulties.

Stress Urinary Incontinence

Stress urinary incontinence is the most common form of urinary incontinence in women, often as a result of childbirth and aging. It is any involuntary loss of urine, occurring most prevalently during physical activity such as exercise, laughing, sneezing or coughing. This happens when pelvic tissues and muscles become weak and allow the bladder “neck” (where the bladder and urethra intersect) to drop during bursts of physical activity. It also occurs when the sphincter muscle that controls the urethra weakens and prevents it from stopping the flow of urine.
Surgical Repair
of Pelvic Organ Prolapse and Stress Urinary Incontinence

Suturing

Traditionally, pelvic organ prolapse was repaired by using sutures. This strengthened the vaginal wall, restoring a more normal position of the vagina and pelvic organs.

Synthetic Mesh

Synthetic surgical mesh is made of polyester or polypropylene. For years, it has been used for the treatment of hernias throughout the body including inguinal hernias in the pelvis.

Placement of Synthetic Vaginal Mesh

When a synthetic mesh kit is used, it is typically placed vaginally with needles and pre-cut pieces of the synthetic material. The mesh is anchored to a fixing point in the pelvis, most commonly ligaments.

Bladder Sling

When a bladder sling is placed, it is designed to lift the bladder to prevent prolapse. Some are anchored into surrounding muscles or ligaments. Some were designed with no anchoring, but are manually positioned and tightened.

Anterior Vaginal Mesh

In the case of cystocele, or anterior prolapse, a synthetic mesh can be used. It is sutured into the epithelial layer of the vagina and anchored to nearby sacrospinous ligaments.

Posterior Vaginal Mesh

With a posterior prolapse, a synthetic mesh can also be used. It is sutured into the epithelial layer of the vagina and often anchored to nearby sacrospinous ligaments.

FDA Study Finds Similar Results

In an FDA study analyzing organ prolapse patients from 1996 to 2010, it was found that those women who received transvaginal mesh to treat this condition were exposed to additional risks than those women who were treated with traditional suturing. Both types of procedures, suturing or the use of mesh produced similar results, according to the FDA.
2. Health Complications
Associated with Use of Synthetic Vaginal Mesh

Women have suffered a return or worsening of prolapse and incontinence with the placement of synthetic vaginal mesh. In a health alert, the FDA warned health care professionals about the numerous health complications associated with the use of synthetic vaginal mesh including erosion of the mesh, pain, dyspareunia (pain with intercourse), bleeding and extrusion or expulsion of the mesh.

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“There are cases where patients actually develop worse incontinence after mesh, and it could be either the overactive bladder type of incontinence, which is the urge incontinence, or overflow incontinence.”

Pelvic Pain Generators
with Synthetic Vaginal Mesh

Pelvic pain that develops after mesh placement could be caused by numerous generators. Commonly, it is due to mesh erosion and/or spasms of the pelvic floor muscles.

Erosion of Vaginal Synthetic Mesh

The transvaginal synthetic mesh is often sutured under the epithelium of the vagina, which is the outermost layer. In many women, the implanted mesh actually erodes through the epithelium and is visible in the vagina. A mesh used as a bladder sling may erode into the urethra, the bladder, the bowel, or the vagina.

Other pain generators from synthetic vaginal mesh include dyspareunia, which is pain during intercourse. More specifically, it involves a spasmodic contraction of the vagina. Pain can also be generated by bleeding and the extrusion or expulsion of the implanted mesh.

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“Probably the most common cause of pain with sexual intercourse is the spasm of the pelvic floor muscles. The vagina is surrounded by (these) muscles, mainly the levator and obturator muscles. If those muscles are in spasm, they hurt even more during intercourse.”

3. Diagnosis of Pudendal or Obturator Neuralgia
with Use of Synthetic Vaginal Mesh

Pudendal Nerve Anatomy

In the female anatomy, the pudendal nerve starts at the sacral roots of the spine and runs down into the pelvis between the sacrospinous and sacrotuberous ligaments. This is where synthetic meshes have been commonly anchored. Ultimately, the nerve separates into three branches, one going to the rectum, another to the urethra and a third to the clitoris.
Pudendal Neuralgia

Pudendal neuralgia occurs when the nerve is either damaged or compressed. Depending on where the synthetic meshes or their arms were placed or anchored, pressure can be applied to the nerves causing clitoral or rectal pain and incontinence (either urinary or fecal).

Diagnosis of Pudendal Neuralgia from Synthetic Vaginal Mesh Use

The clinical symptoms of pudendal neuralgia are pain in the area of innervation of pudendal nerve: in women, this can be the clitoris, vulva, vagina, perineum, and rectum. Women with pudendal neuralgia have pain that is worse with sitting and is usually better with standing, lying down or sitting on the toilet. Some women with severe pudendal neuralgia cannot sit at all.

“That’s how we monitor the improvement with our treatments. How long you can sit? That is closely correlated with our patient outcomes.”

Pain from Pudendal Neuralgia

Allodynia

Allodynia is a phenomenon where an impulse that normally does not cause any pain causes pain. So a gentle touch to the area, which by most people is perceived as pleasant, is perceived as pain by women with allodynia. Women that have allodynia in the perineal area (the labia or the rectum), where underwear normally does not cause discomfort, can have significant pain. Typically women with allodynia in the perineal area will wear big sweatpants or skirts and no underwear because the tight-fitting seams are what really bothers them.

Neuralgia Pain

Neuralgia pain can be sharp, burning, tingling, and numbing sensation.

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Pain with Sex

Women with pudendal neuralgia can have pain during intercourse, pain with sexual arousal or pain with orgasm.

Burning with Urination

Women with pudendal neuralgia can suffer from burning with urination, similar to interstitial cystitis. Women can also experience either frequency, meaning they go to the bathroom often or hesitancy, which is not being able to urinate.

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Sensation of Foreign Body in Rectum

Women with pudendal neuralgia can endure the sensation of having a foreign body in the rectum or in the vagina without a foreign body actually being present.

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Anal Pain

Women with pudendal neuralgia can suffer debilitating anal pain, especially with bowel movements. There are also women who have such a severe spasm of the anal sphincter that they cannot evacuate.

“There are patients that have such horrible pain with bowel movements that they are asking to have a colostomy placed so they don’t have to have bowel movements. I see patients often that tell me they will use a teaspoon to scoop out their stool.”
Psychological Impact from Pudendal Neuralgia

Women who suffer from pudendal neuralgia can become quite demoralized and depressed. In addition to chronic pain and physical disability, women lose their ability to enjoy a healthy sex life.

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“I often see patients that were abandoned by their partners, husbands, because they’re not able to have intercourse. They are told nothing is wrong with you, it must be all in your head. Then their partner hears that and they’re gone.”

Diagnosis of Obturator Neuralgia from Synthetic Vaginal Mesh Use

In the human body, the obturator nerve arises from the divisions of the lumbar nerves in the spine. It passes through the pelvis to the knee. Some of the synthetic surgical meshes, especially the incontinence meshes, were attached to the obturator membrane. The obturator nerve goes through the same area.

Obturador neuralgia is less common than pudendal neuralgia. It involves damage or compression of the nerve, causing pain and physical impairment. This is typically associated with walking, especially on an incline.

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4. Treatment Protocols of Chronic Pelvic Pain with Synthetic Vaginal Mesh Use

Diagnosis and treatment of chronic pelvic pain often requires the care of a medical specialist. In women suffering from organ prolapse or incontinence who were implanted with a vaginal synthetic mesh, a detailed assessment must be performed. This is necessary to eliminate other sources of the pain and determine how the mesh may be contributing to it, before effective treatment can be implemented.

MRI / Physical Therapy / Physician Evaluation

Treatment protocols for chronic pelvic pain that is associated with use of synthetic vaginal mesh should begin with a pudendal MRI. This is often performed in a hospital setting. During that visit, the patient should see a physical therapist who performs an assessment of the patient’s pelvic floor muscles and the pelvic nerves. On the following day, the patient is seen by the physician who has the results of the MRI and the assessment by physical therapist.

Treatment of Pelvic Floor Muscle Spasms

If the patient has demonstrated significant pelvic floor muscle spasms, she is scheduled for Botox injections. She is also given vaginal suppositories with Valium and baclofen, which seem to work well for relieving pelvic floor muscle spasms.

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“I often see patients that were abandoned by their partners, husbands, because they’re not able to have intercourse. They are told nothing is wrong with you, it must be all in your head. Then their partner hears that and they’re gone.”

After waiting two weeks for the Botox to really start working, if the patient has relief of pain, then we do not do anything else.”
Treatment Protocols
for Chronic Pelvic Pain

Diagnosis
MRI
Physical Therapy
Physician Evaluation

Treatment
Treatment of Pelvic Floor Spasms
- Botox Injections
- Vaginal Suppositories
CT Guided Nerve Block

Surgery
Mesh Removal
Nerve Decompression/Wrap
Pain Pump
Ketamine Infusions

CT Guided Nerve Block

If a woman does not get pain relief with Botox treatments, then the next step in treatment protocol can be three CT-guided pudendal nerve blocks. These are performed by an interventional radiologist, under local anesthetic and a steroid. The goals of this procedure are to diagnose pudendal neuralgia and to deliver steroid to treat the pain.

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“...If a woman only has a relief of pain maybe a week or two, then that’s not good enough. But I do have women where they had months of pain relief. In those women I would not offer them surgery. I would just say come here twice a year and get your pudendal nerve block.”

Surgery
for Mesh Removal

Complete vs Partial Mesh Removal

If nothing else has helped, either a pudendal nerve block or Botox injections, treatment protocol calls for the surgical removal of the mesh, a procedure that can last 6 to 8 hours.

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“I strongly believe that the entire mesh has to be removed - meaning not only the part that is in the vagina - but also the arms of the mesh that go deep into the body. And that can only be achieved if the surgery is done both vaginally and intra-abdominally. “

Complications Associated with Partial Mesh Removal

When a woman undergoes a surgical procedure that results in partial removal of the mesh, subsequent surgeries for further mesh removal can be more complex and problematic.

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“The key is to study the operative reports of placing the mesh and also what was removed to give us the idea how much of the mesh was left behind. By doing a lot of mesh removals I know what to expect where those arms should be, we try to find it in that area. I mean there are some patients where you just can’t find it, but in most of the patients we still find the end of the mesh.”
Incontinence Procedure Included

In addition to removal of the mesh, treatment protocols include a procedure to treat for urinary incontinence during this surgery. It is called a Burch Procedure, which is a traditional anti-incontinence surgery.

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“(This procedure) was almost abandoned when the meshes came on the market. I do this to prevent the patient from having urinary leakage.”

Surgery: Pudendal Nerve Neuralgia

If the chronic pelvic pain continues, following mesh removal, nerve blocks and Botox injections, the treatment protocol addresses nerve compression. Evaluation and treatment involves surgery and the use of ultrasound-guided selective blocks of the branches of the pudendal nerve.

“We can block the perineal branch or the clitoral branch. We’re not that good blocking the rectal branch. So if based on those selective blocks, which of the blocks gives a woman pain relief, we then proceed with surgical decompression.”

Surgical Nerve Decompression

Selective terminal branch blocks of the pudendal nerve are performed to determine where decompression needs to take place. The main trunk of the pudendal nerve can be decompressed through the buttock. The decompression of the perineal or clitoral branches can occur through the perineum.

“We do a nerve wrap at the end of the surgery to prevent the nerve from scarring.”

Activated platelet plasma can also be introduced that contain growth factors to promote the growth of nerve cells that produce myelin, which is the outside coating of the nerve.

“We use the activated platelets to again speed up or promote nerve healing.”

Pain Pump

With this procedure, the treatment protocol also recommends the placement of a Marcaine pain pump next to the nerve. It drips Marcaine on the nerve for about two weeks after surgery. Its purpose is to desensitize the nerve and spinal cord.

“I believe that patients that have severe neuropathic pelvic pain, they can develop a central sensitization phenomenon in the spinal cord, which is somewhat like a phantom pain or program pain.”

Ketamine Injections

During this procedure, treatment protocol includes ketamine infusions. Ketamine is an anesthetic medication that is known to reverse the central sensitization of the nervous system.

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“I think the neuropathic pelvic pain is like having CRP, the complex regional pain or a reflex sympathetic dystrophy of the pelvis. That’s why the patients get a ketamine infusion. We usually keep them in the hospital for a day or two on fairly high-dosed ketamine infusion to reduce that RSD symptoms.”

**Periodic Ketamine Infusions**

In cases of continued chronic pelvic pain following previous treatments such as mesh removal, nerve blocks, botox injections, nerve decompression, and ketamine infusions, the treatment protocol focuses on periodic ketamine infusions.

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“We admit patients to the hospital for a week and we give them a high dose of ketamine infusion, and that seems to be working. After you have fixed the offending factors, which actually started the pain, ketamine is there to reverse that activation of the spinal cord.”

**Surgery: Obturator Nerve Neuralgia**

With a diagnosis of obturator nerve neuralgia, treatment protocols recommend surgery involving the complete removal of the mesh and decompression of the nerve.

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“(I say) you may be incontinent after this procedure or your prolapse may be back, every single patient says take away the pain and I don’t care about my incontinence and prolapse.”

**Restrictions and Therapies**

Following treatment for chronic pelvic pain, women are advised to follow a specified exercise regimen and may benefit from the support of a physical therapist who specializes in this area.

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“We have exercises and restrictions that were written up by a physical therapist printed instructions of the things they can and cannot do after surgery and with exercises they’re supposed to do.”

**Ongoing Pain**

Many women with chronic pelvic pain following the implantation of vaginal synthetic mesh do not experience complete pain relief even with medical intervention. This includes surgery and therapies, although most see improvement.

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Women who remain disabled by chronic pelvic pain, prolapse and incontinence require ongoing medical care. This is both physical and psychological and is accomplished by a multi-disciplined team of health care professionals including urogynecology, psychiatry, psychology and pain specialists.

**Ongoing Organ Prolapse and Incontinence**

Despite the best medical care, it’s possible that a woman may continue to endure the complications associated with organ prolapse including either urinary or fecal incontinence.

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Chronic Pelvic Pain

“(Neuropathic pelvic pain) treatment requires multiple specialists in different fields of medicine, and honestly this is a pain that may last a lifetime.”

Medications

Women with chronic pelvic pain may benefit from the use of certain medications. Specifically for nerve pain, these drugs include Neurontin or Lyrica. Cymbalta, which is an antidepressant, is sometimes indicated because it reportedly relieves some chronic pain. Vaginal suppositories (Valium/Baclofen or Belladonna/Opium) may be prescribed to treat pelvic floor muscle spasms. And narcotics may also be prescribed.

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Treatment of Urinary Urgency and/or Frequency with Interstim Device

The interstim device is designed to treat urinary urgency and frequency. It also may have other benefits for women with neuralgia as a non-narcotic modality to treat persistent pain after nerve decompression.

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“Some physicians right now around the country that started placing the InterStim not how it is intended to be placed in the sacrum, but placing it into the Alcock’s canal of the pudendal nerve with fairly good results.”

On-Going Pain Management

Treating chronic pelvic pain long term often requires the support of a pain management specialist, a physician who expertly manages pain medications and therapies. Often joining the circle of care is a physical therapist, familiar with the ongoing treatment of chronic pelvic pain.

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“I think there is a small percentage of patients that are completely pain free. I believe that about 70 or 80 percent of patients with all the procedures we do are better as far as pain goes. Even after all these procedures very rarely do we eliminate the pain completely.”

Depression and Family Issues with Synthetic Vaginal Mesh Health Complications

Women with chronic pelvic pain often have symptoms of depression. There are also broader family issues. Relationships are stressed and sometimes damaged beyond repair, with the loss of physical activity, intimacy and pain.

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“Spouses are equally affected by the complete lack of sexuality. Intercourse hurts. A lot of these women have pain simply with sexual arousal, and even the thought of sex or any thought that produces arousal will cause pain. Patients are absolutely debilitated by caused by mesh and a lot of them are even suicidal.”

Ongoing medical supervision and treatment is imperative for women suffering from chronic pelvic pain following the implantation of vaginal synthetic mesh. Treatment includes surgery, therapies, medications and both individual and family counseling. This multi-disciplinary approach offers a women the best chance of a more normal, albeit radically altered, life.