ABSTRACT

Background: Chronic pelvic pain in women due to hernias may be misdiagnosed by practicing clinicians. These fascial defects, their symptoms, physical findings, and proper treatment must be known in order to help women experiencing this form of chronic pelvic pain.

Methods: All procedures were performed by the primary author using standard laparoscopic tension-free mesh techniques.

Results: The study included 264 patients referred to a chronic pelvic pain clinic, who underwent 386 laparoscopic surgical repairs of hernial defects. Ninety percent of the patients underwent concomitant procedures appropriate for their multiple pain generators. Length of follow-up is 1.53 years (range, 2 months to 5.5 years). Evaluation of patients’ pain component from the repaired hernia was recorded. There have been no recurrences. One persistent ilioinguinal neuropathy from an inguinal hernia repair (0.4%) has occurred. All other patients received relief of their hernia pain (99.6%). Four complications from concomitant surgeries (1.5%) are reported.

Conclusions: Laparoscopic treatment of hernia pain in women is effective in relieving chronic pain and has a low recurrence and complication rate in the hands of experienced laparoscopists.

Key Words: Chronic pelvic pain, Hernias.
nonpalpable or occult inguinal hernias. These can only be adequately evaluated laparoscopically.\textsuperscript{4,5} Diagnosis is suspected by pain distribution and tenderness over the internal ring. Symptoms include pain in the lower abdomen or groin when lifting, coughing, and sneezing with radiation into the labia majora and anterior thigh. The neurological nociceptors include the genital branch of the genitofemoral nerve, the ilioinguinal nerve, the femoral nerve, or all of these. Patients may have indirect, direct, femoral, or a combination of any of these three.

Indirect inguinal hernia is the most common hernia in women. It is congenital and due to nonclosure of the processus vaginalis. Tissue protrudes through the internal ring and passes down the inguinal canal a variable distance with the round ligament. Direct inguinal hernia is acquired and is the second most common inguinal hernia in women. Femoral hernias occur more commonly in women than in men. They are produced by a protrusion of preperitoneal fat or viscus through a weak transversalis fascia and into the femoral ring and the femoral canal.\textsuperscript{6}

Pelvic floor hernias include sciatic, obturator, paravesical, and perineal. All pelvic floor hernias are more common in women due to the broader pelvic inlet and the stresses of pregnancy, labor, and delivery. Sciatic hernias result from the protrusion of a peritoneal sac through the greater or lesser sciatic foramen. These patients will have typical sciatica with a negative MRI for disk herniation. Findings at laparoscopy are a sac in the lateral pelvis that deviates the ureter medially toward or onto the uterosacral ligament. Ovarian incarceration can occur in these defects.\textsuperscript{7}

Obturator hernia results from a protrusion of preperitoneal fat or an intestinal loop through the obturator foramen alongside the obturator vessels and nerve. It is considered rare (0.07% of all hernias), but it may be the most common in the pelvic floor. These patients present with pain in their lower pelvis and inner thigh, which radiates into the hip and behind their knee. Pain increases when standing, lifting, and crossing the legs. Three types of obturator hernias are described based on the anatomical defect that is present. Type I occurs when preperitoneal fat and connective tissue (pilot tag) enter the pelvic orifice of the canal. Type II causes dimpling of the peritoneum over the canal leading to the formation of an empty peritoneal sac. Type III occurs on the entrance of an organ (bowel, ovary, or bladder) that eventually fails to reduce spontaneously. A partial or complete small bowel obstruction has historically been responsible for the diagnosis of most obturator hernias (88%). The incidence of these hernias is significantly higher in females (6:1) and may be due to their larger foraminal diameter. Bowel obstructions from obturator hernias are usually in elderly (average age 70), thin patients. With the advent of CT and MRI, diagnosis of these type III hernias may occur before the onset of bowel obstruction. A small proportion of patients may present only with chronic pelvic pain and inner-thigh neuralgia. Diagnosis is made by vaginally palpating the obturator foramen reproducing the symptoms as a result of compression of the obturator nerve in its tunnel (Howship-Romberg sign).\textsuperscript{6}

A paravesical hernia may pass through the supravesical fossa of the anterior abdominal wall or into spaces around the urinary bladder. Increased lower pelvic pressure may be the only symptom. These hernias are easily diagnosed laparoscopically.\textsuperscript{6}

Perineal hernias are extremely rare and can be either anterior or posterior to the superficial transverse perineal muscle. They can be spontaneous or occur after abdominoperineal resection.\textsuperscript{6}

The treatment of chronic pelvic pain due to hernias is surgical. It can be performed by open or laparoscopic techniques. The laparoscopic approach is either transabdominal or extraperitoneal. We strongly favor the laparoscopic approach due to its minimally invasive nature and its diagnostic capabilities. For most patients with chronic pelvic pain, surgical trauma increases spinal cord upregulation and potentiates their associated neuropathies and reflex myalgias. Many patients will have multiple pain generators and the transabdominal approach allows concomitant diagnosis and surgical management. However, the technical ease and improved visibility of the extraperitoneal access to the obturator space makes this technique preferable for obturator hernia repairs.

Recently, our preference for laparoscopic treatment of inguinal hernias in women has been challenged by a large randomized, controlled study in male patients.\textsuperscript{9} By comparing recurrence and complication rates in open and laparoscopic repairs, the conclusion was that the open technique gives superior results. The study did emphasize that the results are experience dependent. After a surgeon had performed a large number laparoscopically, there was no significant difference in recurrences or complications.

An issue not addressed by this study was the difference in patients with acute pain versus chronic pain. Chronic pain causes complex neuropathology, centralization, and neuroupregulation that may not be seen in the usual hernia patient. Most of our patients have multiple visceral pain generators in addition to hernias. These include endome-
to triosis or ovarian and tubal pathologies, which require treatment along with their hernias. Therefore, this all-male study may have limited value for those who treat chronic pelvic pain in women.

To test our hypothesis that hernia pain could be effectively treated by laparoscopic repair in women with chronic pelvic pain, we undertook this retrospective study. An attempt was made to identify all pain generators preoperatively, visceral and somatic, and to specifically evaluate the surgical treatment outcomes based on that portion of the patient’s symptoms produced by the hernial defect. Alleviation of site-specific groin, sciatic, abdominal, and obturator pain was the end point for successful surgical treatment. Relief of concurrent dysmenorrhea, dyspareunia, pelvic floor tension myalgia, irritable bowel syndrome, vulvar vestibulitis, painful bladder, iliopsoas and quadratus lumborum muscle spasm, trigger points and a host of other pathologies were evaluated and treated independently as indicated.

METHODS

Our patient population comes from a referral-based practice dedicated to the diagnosis and treatment of chronic pelvic pain in women. All patients completed an extensive pelvic pain questionnaire designed to detect multiple pain generators both visceral and somatic. This instrument is available at the International Pelvic Pain Society website, www.pelvicpain.org. All previous operative reports were obtained and reviewed.

A detailed, pain-focused, physical examination was conducted including a careful search for hernial defects, which might be suspected from the patient’s history. Lower pelvic pain complaints were investigated by careful palpation of the internal rings for tenderness and impulse both lying and standing. Pain in the pelvis and medial thigh with referral to the hip and posterior knee had palpation of the obturator canals. Palpation of abdominal scars with and without head raising was routine. Sciatic hernias were suspected by the patient’s complaints of buttock pain referred down the posterior thigh in the absence of herniated disks.

Laparoscopic repairs were performed by the transabdominal preperitoneal technique, except for obturator hernias, which were done entirely extraperitoneally. Standard tension-free mesh techniques were used in all cases. All repairs were performed by the primary author. All 16 obturator hernia patients underwent bilateral repair. This was due to the high incidence of contralateral recurrence and the fibrosis from the initial repair limiting future access to the retropubic space in these patients.

RESULTS

From January 13, 1999, through December 17, 2003, 386 hernial defects were repaired by the primary author on 264 patients referred to a chronic pelvic pain clinic. There have been no recurrences. Surgical results were excellent and complications were rare. Length of follow-up is 1.53 years (range, 2 months to 5.5 years). One patient (0.4%) with an inguinal hernia had persistent inguinal pain from an ilioinguinal neuropathy, and all other complications resulted from concomitant surgeries. Symptoms referable to their hernias resolved in 263 patients (99.6%). Other laparoscopic surgeries were performed at the same time as hernia repairs in 235 (90%) patients. Laparoscopic hysterectomy, excision of endometriosis, lysis of adhesions, uterine suspension, presacral neurectomy, and other procedures all had separate, but well-defined, potential pain relief benefits. Pain relief from the specific repaired hernial defects was easily discriminated. The pain produced by the hernia was the only symptom evaluated in this study. Four patients experienced complications from concomitant surgeries (1.5%) (Table 1).

Postoperatively, patients with persistent nonhernial pain (dyspareunia, dysmenorrhea, muscle spasms, and others) were treated in the recommended multidisciplinary fash-
Many continue to be followed in our clinic with the necessary pharmacological, physical, therapeutical, and psychological support. Their treatment is tailored to accomplish maximal reproductive and sexual function with minimal pain. While the percentage of patients requiring continued care was not calculated, all were more easily managed after surgical treatment and resolution of their hernia-generated pain components.

CONCLUSION

Hernias are responsible for chronic pelvic pain in some women. To obtain symptomatic relief, this diagnosis must not be missed by clinicians treating women with chronic pelvic pain. Hernias should be suspected by a thorough history and physical examination. They can be confirmed and treated laparoscopically along with other concomitant visceral pathologies. Laparoscopic treatment of these fascial defects has a low recurrence and complication rate in the hands of an experienced laparoscopist.

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