Chronic pelvic pain in menopausal women

Przewlekły ból miednicy u kobiet w wieku menopauzalnym

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Summary

Diagnosis and management of chronic abdominal pain in peri- and postmenopausal women is a difficult clinical problem requiring a multidisciplinary approach. Numerous studies have helped in better understanding of the pathogenesis and pathophysiology of pain in these patients, however, the success requires intensive investigation by a general practitioner or a specific specialist, depending on the involved organ, who can interpret pain also in the context of the psychosocial situation of the patient.

Key words: pelvic pain, menopause.

Streszczenie

Diagnostyka i leczenie przewlekłego bólu miednicy u kobiet w wieku około- i pomenopauzalnym jest trudnym problemem klinicznym, wymagającym podejścia interdyscyplinarnego. Liczne badania pomogły w lepszym zrozumieniu patogenezy i patofizjologii bólu tych pacjentek, jakkolwiek końcowy sukces wymaga szczegółowej diagnostyki lekarza ogólnego lub lekarza specjalisty (w zależności od zajętego narządu), którzy potrafią zinterpretować dolegliwości bólowe również w kontekście sytuacji psychospołecznej pacjentki.

Słowa kluczowe: ból miednicy, menopauza.

Introduction

Chronic pelvic pain (CPP), frequently encountered in physicians' practice, is a condition affecting about 14% of adult women. The CPP is most commonly caused by the diseases of the digestive system, urinary and gynecological disorders, and diseases of the musculoskeletal system. Due to hormonal changes occurring during menopause, discrepancies appear concerning the incidence, pathogenesis, clinical picture and diagnosis of these diseases. Chronic abdominal pain associated with endometriosis usually disappears during menopause, however, some patients can be affected. Pelvic inflammatory conditions occur most frequently in women of reproductive age. Only about 2% of women diagnosed with tubo-ovarian abscess were in the menopause stage. There are also differences in the course of irritable bowel syndrome in women during menopause, compared with younger women. Symptoms more commonly appearing in the older women are constipation, chest pain, and sometimes nausea. Changes in the urogenital system in postmenopausal women cause the urinary tract dysfunction, including painful bladder syndrome and urinary bladder inflammation/interstitial cystitis. Symptoms of urinary tract dysfunction occur in approximately 50% of menopausal women and worsen with age. Discomfort associated with the musculoskeletal system that evokes abdominal pain occurs more

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frequently in older age groups and can be the cause of up to 75% of CPP.

Accurate assessment of all of the individual systems allows for making the correct diagnosis and leads to beginning of treatment. However, in many patients, despite consulting experts – gastroenterologists, gynecologists, and urologists, the cause of symptoms is not diagnosed. In this situation, the treatment is applied only to reduce pain.

Definition and epidemiology

Chronic pelvic pain (CPP) is defined as a pain occurring in the pelvis, in the anterior abdominal cavity, under the navel or as a low back pain. The pain can last for a minimum of 6 months and is not related to pregnancy or menstruation [1].

In Great Britain, chronic pelvic pain is the leading cause of women reporting to the primary care physician. It is estimated that among patients aged 15 to 73 years, at least 3.8% suffer from CPP. In comparison, 3.7% suffer from asthma and 2% from migraine headache [2]. In the United States of America, 12-20% of hysterectomies and about 20-40% of laparoscopies are performed as a part of the diagnosis and treatment of CPP.

Causes of CPP

Potential visceral sources of chronic pain include symptoms in the reproductive system as well as in the urinary and digestive tract. The potential somatic sources include the pelvic bones, ligaments, muscles and fasciae [1]. The most frequent causes of CPP are the disorders of the digestive system (about 38%), the second in frequency are anomalies of the urinary tract (about 31%) and, finally, gynecological problems (about 20%) [2, 4]. About 20-30% of patients with CPP, reporting to primary care physician, have more than one disorder which might cause pelvic pain [5, 6].

The present paper focuses on the most common diseases encountered in the practice of family practitioners and gynecologists. Various causes of the CPP are presented in Table I.

Prevalent pathologies causing or worsening CPP are endometriosis, pelvic inflammatory disease (PID), irritable bowel syndrome (IBS), painful bladder syndrome (PBS), interstitial cystitis (IC), and myofascial pain syndromes (Table I). All of the disorders occur in peri- and postmenopausal women. The majority of studies concerning the use of laparoscopy and hysteroscopy in the diagnosis and treatment of CPP show that, with age, there is a decrease in the detection of endometriosis simultaneous with the increase of diagnosed intrauterine adhesions and uterine fibroids [7].

Endometriosis

Endometriosis is an estrogen-dependent inflammatory disease, defined as the presence of endometrial-like tissue outside the uterine cavity, mainly in the pelvic peritoneum and ovaries [8]. The affected eutopic endometrium, as well as a proinflammatory milieu in the peritoneal cavity of patients with endometriosis, as a consequence of retrograde menstruation, leads to the alteration in the concentration and activity of different bioactive substances e.g. cytokines, chemokines, matrix metalloproteinases and other bioactive molecules, which is a key aspect of chronic pain states [9-11].

Endometriosis is most often diagnosed among women in their reproductive age with the average age of 28 years. In most cases, the symptoms of endometriosis disappear at menopause. Incidence in women of menopausal age is estimated at about 5% of all cases, most of which are recorded in women taking estrogen replacement therapy [12]. Postmenopausal endometriosis (PE) is mainly located in the ovaries as well as outside the reproductive system: the large intestine, bladder, lungs, liver and skin. PE is more common in obese women [13]. In women with a history of endometriosis, estrogen hormone therapy (HT) during menopause can cause a reactivation of endometriosis or even a danger of occurrence of new implants [14]. On the other hand, patients with a history of endometriosis are at high risk of long-term consequences of estrogen deficiency such as cardiovascular disease, osteoporosis, dementia, Parkinson's syndrome, increased risk of colorectal cancer,

Tab. I. Ailments associated with chronic pelvic pain in women

Gynecological	Urological	Gastrologic	Musculoskeletal	Other
endometriosis	malignant neoplasm of bladder interstitial cystitis radiation cystitis urethral syndrome	colon cancer constipation inflammatory bowel disease irritable bowel syndrome	myofascial pain back pain posture fibromyalgia ilio-nerve neuralgia levatorani syndrome perinatal pelvic pain syndrome	cutaneous nerve retraction in abdominal scar after surgery depression somatic disorders
gynecological cancers				
residual ovary syndrome				
pelvic congestion syndrome				
inflammation of the pelvis				
tuberculous salpingitis				

diabetes mellitus type 2, reduced quality of life and overall mortality [14]. The risk of recurrence of endometriosis during menopause is lower in patients with surgically removed uterus and its appendages than in patients with natural menopause. However, oophorectomy has a much stronger negative impact on the quality of life than the pharmaceutically induced menopause [15]. It is worth mentioning that the evidence of beneficial effects of HT on the reduction of mortality applies only to younger patients under 60 years of age (due to a decrease in coronary syndrome) [14]. In a group of older women taking HT, there is no evidence of beneficial effects of HT on the life expectancy [14]. In postmenopausal women, HT may increase the risk of malignant transformation of the existing endometrial implants. Using estrogens in women with a body mass index (BMI) higher than 27 is a risk factor for cancer [13]. Simultaneous usage of progestogen and estrogen lowers the risk of the renewal of endometriosis and cancer mutations, however, it aggravates the risk of breast neoplasm. Nevertheless, a combination of low doses of estrogen and progestogen is preferred in women during menopause with a history of endometriosis [13]. Another option is using tibolonewhich does not increase the risk of endometriosis renewal, hyperplasia or cancer in women during menopause, and is comparable to the combined and continual estrogen and progestogen usage [16]. Regression of endometriosis in postmenopausal women using HT is an indication to discontinue the treatment.

Pelvic inflammatory disease

Pelvic inflammatory disease is another frequent cause of CPP. It is an acute or chronic inflammation of the uterus, ovaries, fallopian tubes, and visceral peritoneum. This is caused by sexually transmitted microorganisms or through the spread of infection to nearby organs. PID affects women of reproductive age, but may appear in any age group, even during menopause. It is estimated that in the United States, PID is the cause of 5-20% of all hospitalizations for gynecologic disorders. In many patients who experienced PID, pelvic pain syndrome may also occur. The incidence of PID in menopausal women is not exactly known. Studies have shown that less than 2% of women diagnosed with tubo-ovarian abscess were postmenopausal [17]. There are differences in the structure of cervical epithelium in women of reproductive age and after menopause.

The cervical epithelium of younger women is more susceptible to the adhesion of *Neisseria gonnorhoeae* and *Chlamydia trachomatis*. In older patients after cervical epithelial transformation, the adhesion potency of these bacteria decreases. The cervix also acts as a functional barrier to ascending infection. In postmenopausal women, cervical mucus is less permeable and therefore acts as a mechanical barrier against microbes. Lack of menstrual bleeding also lowers the risk of infection in the upper genitourinary tract [17]. The risk factors, such as being exposed to sexually transmitted infections, occur less frequently after the menopause. However, in elderly women (beyond 65 years of age), PID is most often a consequence of the spread of infection from organs adjacent to pelvis. Diseases such as diverticulitis, Crohn's disease, appendicitis, colorectal or small intestine cancer can activate the inflammation. These infections cause most frequently one-sided or bilateral tubo-ovarian abscess [18].

Risk factors for PID include postmenopausal gynecological procedures performed on uterus and/or anatomical abnormalities of the genital tract such as cervical stenosis, cervical cancer, uterine fibroids and endometrial polyps.

Bacterial flora of the lower genitourinary tract in postmenopausal women consists mostly of gram-negative aerobic bacteria, especially *E. coli*, which are the most common cause of PID after menopause (up to 76%) and *Klebsiella pneumoniae* (up to 43%). In 50-67% of postmenopausal individuals both of these pathogens caused the infection [19]. Also, *Pseudomonas* (14%), *Staphylococcus aureus* (25%), *Staphylococcus albus* (25%), *Enterococcus* spp. [19] and anaerobes were found in these women. The diagnosis of PID in women of reproductive age can be made based on the typical symptoms, such as pain in the lower abdomen, abnormal vaginal discharge or cervicitis. Since the main mechanism of PID in older women is the spread of inflammation from the adjacent organs, the symptoms may not occur in women of reproductive age. As mentioned earlier, the majority of postmenopausal women with PID suffer from tubo-ovarian abscess. Therefore, the most reliable diagnostic method in that case is laparoscopic surgery during which other anomalies can also be found e.g. fibroids, diverticulitis, appendicitis or cancerous intestinal infiltration.

In other studies it was shown that more than 40% of postmenopausal women are affected by cancer. For this reason, in the absence of a positive response to treatment within 48 hours, a surgical treatment should be performed [20].

Irritable bowel syndrome

The main gastrological cause of CPP is irritable bowel syndrome. It is a functional disorder in bowel habits where common symptoms are chronic abdominal pain with diarrhea or constipation [21]. According to the recent Rome III Criteria of diagnosing IBS, the time needed to recognize it was shortened from 12 to 6 months (Table II) [22]. About 50% of women reporting to gynecological clinics due to CPP are diagnosed with IBS [21]. The disorder starts mainly in the third and fourth decade of life. Supposedly, it is connected with

Tab. II. Irritable bowel syndrome. Rome III Criteria

Recurrent abdominal pain or discomfort of at least 3 days per month occurring for the last 3 months, associated with at least two of the following:
1. Improvement with defecation
2. Onset associated with a change in frequency of feces
3. Onset associated with a change in form (appearance) of stool

Criteria met for the last 3 months, with onset of at least 6 months before diagnosis.

visceral hypersensitivity strongly pronounced in young people [22]. Despite this, even elderly postmenopausal patients are affected by IBS.

Three main clinical symptoms associated with IBS are abdominal pain, diarrhea and constipation. Flatulence and feeling of incomplete bowel evacuation also occur. Less common symptoms include dyspareunia, nausea, back pain, thigh pain, and chest pain, increased number of voiding, as well as depression and anxiety. In postmenopausal women, in the course of IBS, nausea is less common, while hard, lumpy stool and constipation occur. Chest pain occurs more often in menopausal women [24].

The diagnosis of IBS can be made based on symptomatic criteria. In any case of suspecting the presence of organic disease and/or family history record, procedures as proctoscopy, colonoscopy, abdominal ultrasound or gastrointestinal infusion are performed [25].

Painful bladder syndrome/Interstitial cystitis

Painful Bladder Syndrome is a group of symptoms consisting of pain above pubic symphysis associated with filling of the bladder and increased frequency of urination during the day and night with no symptoms of urinary tract infection. Interstitial Cystitis, however, occurs in patients who have symptoms of PBS and show typical features of bladder distension during cystoscopy, such as discrete, red, and bleeding areas on the wall of the bladder, called "the Hunner's ulcer" [26]. The average age of women suffering from PBS/IC is 40 to 60 years.

After menopause, in the urogenital system, changes known as the urogenital atrophy (UGA) emerge. It promotes the occurrence of senile atrophic urethritis, recurrent infections of the urinary bladder and urethra. The incidence of UGA in women aged 50-60 years is estimated at 50% and in women 70 years old at 72% [27]. In menopausal women with symptoms of PBS/IC it is essential to eliminate malignancy. In any case of persistent symptoms, after urinary tract infection remission, cystoscopy and cytology should be performed. Only after the exclusion of presence of neoplastic changes, can the estrogen therapy be applied [28].

Neurological and musculoskeletal disorders

Another quite common cause of pelvic pain is neurological and musculoskeletal disorders. This applies to about 15% of women with CPP in whom myofascial pain syndrome occurs [29]. In many patients the presence of the so-called trigger points was shown. These points can be found in the abdominal wall, skeletal muscles, fasciae, and soft tissues of the pelvis. Pressing on the trigger points causes local pain and tenderness in distant locations, the so-called referred pain. The diagnosis of allesthesia, a condition in which a sensation or stimulus is perceived at a point on the body that is remote from the point that was stimulated, can be confirmed by injecting local anesthetics into the affected areas.

Diseases associated with the musculoskeletal system, such as scoliosis, osteoarthritis, fibrosing inflammation of muscles or intervertebral discs are much more prevalent in older age groups and can cause pain radiating to the abdomen. In menopausal women, osteoporosis occurs, which further increases the pain. Abnormal posture with excessive lumbar lordosis and thoracic kyphosis, called typical pelvic pain posture can make up to 75% of cases of CPP syndrome [30].

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