



PSYCHOEMOTIONAL CHANGES IN PATIENTS AFTER GYNECOLOGICAL OPERATIONS

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Article history:	Abstract:
Received: 11 th February 2024 Accepted: 20 th March 2024	The review describes in detail the main neurological disorders that develop after hysterectomy: chronic postoperative pain, traumatic neuroma and residual ovarian syndrome as possible causes of chronic pain, mononeuropathy, sexual function and sleep disorders, decreased cognitive and motor functions, lower urinary tract dysfunction and intestines. A significant place is devoted to the mechanisms of development of neurological complications and the relationship of surgery with disturbances of the emotional background in women.

Keywords: Hysterectomy, chronic postoperative pain, oophorectomy, neurological complications, quality of life.

INTRODUCTION

Among the many surgical interventions used today in obstetric and gynecological practice, hysterectomy ranks second, second only to caesarean section. According to statistics from the World Health Organization, every fifth woman undergoes this operation [1]. Such a high prevalence of hysterectomy is facilitated by a significant number of gynecological diseases: malignant neoplasms of the body and cervix, profuse metrorrhagia, uterine prolapse, external genital endometriosis, severe form of internal endometriosis [2].

MATERIALS AND METHODS

Using various surgical approaches (abdominal, vaginal or laparoscopic), doctors are able to remove the entire organ (total hysterectomy), resect the fundus and body of the uterus while preserving its cervix (subtotal hysterectomy), and extirpate the uterus along with the fallopian tubes and ovaries (radical hysterectomy). In order to prevent possible complications, radical surgical treatment is usually used. However, sometimes it is the radical nature of the intervention that becomes an additional risk factor for the development of numerous disorders that occur during hysterectomy. And, unfortunately, neurological complications are increasingly common among such disorders.

RESULTS AND DISCUSSION

Today, the most well-known neurological complication after hysterectomy is chronic postoperative pain. There are many criteria that describe this serious neurological disorder. For example, pain develops or intensifies after

surgery, lasts at least 3 months, is localized in the scar or pelvis, and is primary (i.e., other causes of pain are excluded) [3].

Chronic pain after hysterectomy develops in approximately 30% of operated patients (most often in the pelvic area or at the incision site, less often in the vagina or lower back). Fortunately, in 85% of cases, pain occurs less than once a week, while 92% of women report only minor pain. Therefore, most patients do not even require pain relief with paracetamol or non-steroidal anti-inflammatory drugs. However, in severe cases, pain significantly changes the patient's lifestyle, depriving her of the ability to walk, work, sleep and enjoy life normally, which significantly reduces the quality of life [3].

RESIDUAL OVARIAN SYNDROME

Despite the seemingly obvious disruption of the blood circulation of the residual ovarian tissue, it still continues to function. Thus, in animal models it was shown that about 75% of the residual tissue is revascularized, resuming estrogen synthesis and follicle maturation [4]. Subsequently, this tissue can increase in size, follicular cysts and foci of endometriosis can form in it, which leads to pressure on the adhesions and surrounding organs, causing certain complaints in the patient [2]. Complaints include chronic constant or periodic pelvic pain (in 84% and 9% of patients with this syndrome, respectively), which has a dull and sometimes even stabbing nature, disorders of urination (in 7%) and defecation (in 6%), dyspareunia (in 26%) and vaginal bleeding; sometimes an asymptomatic course is observed [4].

TRAUMATIC NEUROMA



Traumatic neuroma is formed as a result of nerve damage due to injury or surgery. In this case, the cut axons, recovering, grow chaotically, in different directions, forming not a slender bundle of fibers, but a tangle of nerve endings, sometimes forming synapses with each other. This tangle is usually surrounded by fibroblasts involved in the formation of a connective tissue scar (an incorrectly restored nerve is literally enclosed in a connective tissue cuff) [5]. Thus, a neuroma is a nodular formation, sometimes reaching several centimeters in size and consisting of randomly located axons, surrounding Schwann cells and collagen fibers. The result of initial damage to the nerve, as well as pressure from the neuroma on it, is a change in the functioning of ion channels in the axon membrane, which leads to the formation of spontaneous pain in the area of the neuroma (neuropathic pain) and a local decrease in the threshold of pain sensitivity, due to which even slight pressure on the formation causes burning pain [3].

MONONEUROPATHIES

Neuropathies after gynecological operations are uncommon, developing in only 2% of women. Mainly, the femoral nerve, common peroneal nerve, lateral cutaneous nerve of the thigh and genitofemoral nerve are damaged during surgical treatment.

There are two main intraoperative causes of neuropathies. The first is the excessive pressure of the retractor on the psoas major muscle during hysterectomy. In this case, the femoral nerve passing under this muscle and the femoral-genital nerve penetrating its thickness are damaged. The second reason is the incorrect position of the patient during surgery. This may include excessive flexion, abduction, and external rotation of the hip in the Trendelenburg position, in which the femoral nerve and the lateral cutaneous nerve of the thigh, which pass under the inguinal ligament, are compressed by it. Also, the common peroneal nerve, which curves around the head of the fibula, can easily be damaged by excessive pressure from leg supports on the patient's feet and legs during hysterectomy [5].

SEXUAL FUNCTION DISORDERS

Hysterectomy can be complicated by sexual disorders, including: decreased libido, sexual arousal, dissatisfaction with orgasm, and the occurrence of dyspareunia. A decrease in libido is associated with a lack of ovarian hormones in the patient's body (about half of hysterectomies are accompanied by bilateral oophorectomy), as well as with the development of depression and changes in self-perception after surgery. Sexual arousal and corresponding reactions in the genital organs (swelling of the vaginal walls, release of

vaginal secretions, etc.) can be disrupted as a result of changes in the diameter of the pelvic vessels, as well as circulatory disorders in them after removal of the uterus [2]. In addition, after concomitant oophorectomy, the reduced level of estrogens and androgens in the blood leads to atrophy of the vaginal walls and insufficient secretion of vaginal secretions. Dissatisfaction with orgasm is determined mainly in women, whose orgasm is largely dependent on the cervix (do not forget that during orgasm there are rhythmic contractions of the myometrium, which likely affect the intensity pleasure). Finally, the causes of dyspareunia can be the formation of scars in the vagina, its narrowing, shortening and dryness of the mucous membrane [3].

DISORDERS OF HIGHER BRAIN ACTIVITY, SLEEP DISORDERS AND RELATED MOTOR DEFECTS

Such a significant issue as the relationship between bilateral oophorectomy with subsequent changes in hormonal levels and emotional disorders in patients, impaired cognitive and motor functions, and decreased quality of sleep also requires separate consideration. It was previously stated that preoperative anxiety is an important risk factor for the development of postoperative chronic pain [1]. However, anxiety and depressive disorders in the patient (especially during the period between the diagnosis of a malignant neoplasm and surgery to remove the tumor) are today regarded as unconditional predictors of sleep disturbance [2]. Up to 78% of women who have undergone radical surgery for gynecological cancer report impaired sleep quality: patients suffer from insomnia (they cannot fall asleep, they often wake up in the middle of the night or early in the morning), hypersomnia (excessive sleepiness during the day, daytime dysfunction), parasomnias (nightmares), breathing disorders during sleep, cough, loud snoring, sensations of heat or cold, pain in the pelvis and legs. The duration of night sleep often becomes less than 5 hours; many patients are forced to use sleeping pills. In turn, sleep disturbance, and therefore wakefulness, further aggravates the patient's anxiety and depressive disorders, thereby significantly reducing the quality of life. It is important to mention that the low level of estrogen in the body of a woman who has undergone bilateral oophorectomy is itself a risk factor for the development of depressive-like affective disorders (for example, patients receiving estrogen replacement therapy after surgery were significantly less likely to suffer from depression, and the prevalence of depression among women after hysterectomy and oophorectomy is quite high – about 10%) [3].

DYSFUNCTION OF THE LOWER URINARY TRACT AND INTESTINES



After hysterectomy, various disturbances in the functioning of the lower urinary tract may occur: difficult and painful urination, intermittent flow, urinary incontinence, incomplete emptying of the bladder, pollakiuria and nocturia [3]. These disorders occur in approximately 25% of women who have had a hysterectomy. These disorders persist until the end of life and sometimes lead to such serious complications as urolithiasis, pyelonephritis, hydronephrosis, and even rupture of the bladder with further formation of peritonitis [4]. The main risk factor for dysfunction of the lower urinary tract is age: the older the patient, the greater the likelihood of negative consequences of the operation. The thing is that weakening of the pelvic floor muscles and detrusor of the bladder due to age-related degeneration of smooth muscle fibers and reduced levels of calcium in the blood in older people potentiates the causes of dysuric disorders

CONCLUSION

Thus, hysterectomy is very difficult to compare with other organ removal operations in terms of impact on the patient's life: the result of this intervention is a strong symbiosis of not only medical, but also biological, social and psychological problems. The lives of a significant proportion of women who have had a hysterectomy change so much for the worse that the development of severe depression in them seems to be a natural and inevitable phenomenon. And this, in turn, undoubtedly inhibits the recovery of the body after a major operation, contributing to the chronicity of the formed neurological disorders

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