

OPTIMIZATION OF THE APPROACH TO ANESTHESIOLOGY IN COLOPROCTOLOGICAL SURGERY IN PATIENTS WITH CONCOMITANT HEART DISEASE

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Annotation. The review addresses the issue of coloproctological pathologies and the many surgical procedures used to treat them against the backdrop of coexisting cardiovascular pathologies in such individuals, including arterial hypertension, coronary heart disease, and other non-coronary pathologies. The advantages of regional anesthesia, particularly saddle spinal anesthesia, the role and placement of regional anesthesia in patients with concurrent cardiovascular illnesses, and the positive and negative effects of regional anesthesia in a comparable group of patients are also covered.

Key words: spinal anesthesia, saddle anesthesia, ischemic heart disease, arterial hypertension, hyperbaric solution, coloproctology, chronic hemorrhoids, anal fissure.

Аннотация. обзор рассматривает проблему колопроктологических патологий, а также виды операций, которые проводятся при этих заболеваниях в зависимости от сопутствующих заболеваний сердца у таких пациентов: гипертензии, ишемии сердца, других некоронарогенных патологий. В том числе, принципы, методы и методики обезболивания в колопроктологической операции, преимущества региональных анестезий, особенно сидельных спинальных анестезий, роли и место региональных анестезий у больных с сопутствующими заболеваниями сердца, положительный и негативный эффект региональных анестезий у такого контингента пациентов.

Ключевые слова: анестезиология, спинальная анестезия, седельная анестезия, ишемическая болезнь сердца, артериальная гипертензия, гипербарический раствор, колопроктология, хронический геморрой, трещина анального отверстия.

Annotatsiya. ilmiy izlanishda koloproktologik patologiyalar muammosi va bunday bemorlarda yurak-qon tomir patologiyalari fonida ushbu patologiyada amalga oshiriladigan jarrohlik aralashuv turlari o`rganildi (arterial gipertenziya,

yurak tomirlari kasalligi, boshqa koronar bo'lmagan patologiyalar fonida). Bundan tashqari, koloproktologik operatsiyalarda anesteziya o`qazish tamoyillari va usullari, mahaliy anesteziyaning afzalligi, ayniqsa, spinal anesteziyasi, yurak-qon tomir kasalliklari bilan birga keladigan bemorlarda mahaliy anesteziyaning o'rni va roli, bunday guruhdagi bemorlarda mahaliy anesteziyaning ijobiy va salbiy ta'siri o`rganildi.

Kalit so'zlar: spinal anesteziya, sidel-o`qazilgan anesteziya, yurak ishemik kasalligi, arterial gipertenziya, giperbarik eritma, koloproktologiya, surunkali bavosil, anal yoriqlar.

Environments of coloproctological pathologies are the most common chronic hemorrhoids and anal fissure. Hemorrhoids are equally common in men and women of middle and old age. The prevalence of hemorrhoids is approximately 120 cases per 1000 adults. Among proctological diseases, hemorrhoids account for 34 to 41% , which allows us to consider it the most common disease [1, 3, 5]. According to statistical data, the incidence of anal fissure is on average 20-23 cases per 1000 population [3, 5, 6].

Cardiovascular disease (CVD) is the leading cause of sudden death, disability and disability. Common forms of CVD are Arterial hypertension (AH) and Coronary heart disease (CHD). Analysis of statistical data shows that mortality among the population from CVD ranks first. According to WHO, the total number of cardiogenic patients is about 8% of the adult population. Of these, coronary artery disease - 54% and hypertension - 46%, which affects every fourth person, and every second - the elderly [1, 2, 3, 4] .

Despite the significant progress made in recent decades in the study of the pathogenesis, etiology and conservative treatment of chronic hemorrhoids and anal fissures, surgical treatment occupies the main place, and often the only method that provides a complete cure of the pathologically altered area [3, 4, 6, 10].

With age, the levels of atherogenic lipid fractions increase, the pathology of the mammary glands and thyroid gland progresses, obesity is observed, the cardiovascular system (CVS) suffers (aggravation or development of hypertension and coronary heart disease) [7, 9,10]. But among these comorbidities in patients with cloproctological pathologies, a significant role is occupied by Cardiovascular diseases, in particular arterial hypertension, ischemic heart disease and heart defects, are the most common comorbidities in anesthesiology practice, as well as the main cause of perioperative complications and mortality [1, 2, 10]. The management of patients with these diseases requires high professional skills from the anesthesiologist [1, 2, 6]. Aggressive reaction to surgical stimulation, exposure to anesthetics, operational stress, blood loss, changes in fluid and electrolyte balance and body temperature - all these factors create an additional load on the cardiovascular system during operations. The vast majority of anesthetics inhibit myocardial contractility and cause vasodilation. Even those that do not directly affect the cardiovascular system can significantly worsen hemodynamics in severe patients with constantly increased sympathetic activity [2, 4, 7, 10].

It is known that the risk of severe cardiovascular complications with regional anesthesia is lower than with total anesthesia, but scientifically substantiated data in this regard are not yet sufficient. It is also known that in some cardiovascular diseases, the adverse effect of spinal and epidural anesthesia on blood circulation may be more pronounced than the effects of general anesthesia [1, 3, 5].

Principles and methods of anesthesia in coloproctological surgical interventions

Currently, operations in the colorectal region account for more than 50% of all surgical interventions performed on an outpatient basis [1, 4, 6, 8]. Effective anesthesia for proctological operations must meet several criteria:

- effective and long-term analgesia of the anal canal;
- relaxation of the muscles of the obturator ring;
- "dry" operating field;
- Minimal side effect;
- Suppression of the vaso-vagal reflex;
- Easy use in outpatient practice

When performing coloproctological operations on the perineum and anal canal, the following types of anesthesia can be used:

- Local infiltration anesthesia;
- sacral anesthesia;
- Epidural, spinal anesthesia, saddle anesthesia;
- General anesthesia.

The disadvantages of local infiltration anesthesia in coloproctological operations are - the inability to guarantee complete anesthesia; preservation of consciousness (undesirable in patients with an unstable psyche); inability to control body functions during surgical interventions; lack of relaxation [1, 4, 6, 10].

The disadvantages of sacral anesthesia in coloproctological operations are technical difficulty due to anatomical and constitutional features, as well as frequent damage to the coccyx [1, 6, 8].

The disadvantages of epidural anesthesia include: frequent postoperative headaches, back pain, a sharp drop in blood pressure, technical difficulty in obesity, as well as epidural anesthesia should only be performed by a highly qualified experienced specialist [1, 2, 6].

Possible disadvantages of spinal anesthesia include a critical drop in blood pressure, respiratory failure, damage to nerve fibers, possible postoperative headaches and back pain [1, 4, 6].

The disadvantages of general intravenous anesthesia in coloproctological operations are short duration (usually 10-20 minutes), incomplete muscle relaxation and a higher likelihood of overdose compared to regional anesthesia [1, 3, 5].

Saddle spinal anesthesia

The literature provides several options for selective spinal anesthesia, such as hyperbaric, hypobaric unilateral spinal anesthesia and saddle block. Changes in the

baricity of the local anesthetic (LA) and a change in the position of the patient's body in space make it possible to achieve selective blockade [8, 9, 10].

The saddle block (SB) is a variant of spinal anesthesia, which is used in the anesthetic management of surgical interventions in the perineal region and such pathologies as diseases of the rectum, genital organs in men and women, as well as in obstetrics and gynecology [10]. Contraindications for use in SB are similar to other neuraxial blockades. This type of regional technique involves anesthesia of the lower segments of the spinal cord by reducing the dosage of hyperbaric MA solution and keeping the patient in a sitting position for several minutes. According to the literature, this type of spinal anesthesia has no adverse hemodynamic effects, and the likelihood of developing a motor block and dysfunction of the pelvic organs is reduced [8]. Schmidter et al conducted a survey of 400 patients who underwent surgery using a saddle block. Almost 100% of patients were satisfied with anesthesia, and more than 90% of respondents would prefer this type of anesthesia again [9, 10].

Safety, efficacy, duration of intra- and postoperative analgesia, as well as patient comfort and satisfaction make saddle blockade an option in perineal surgery, but, unfortunately, recently a rarely used and little-mentioned method of anesthesia in Russian scientific publications [3, 4, 5, 10].

The role and place of regional anesthesia in patients with concomitant cardiovascular diseases

Regional anesthesia (spinal, epidural) has become widespread due to the simplicity of their implementation, relatively low cost, as well as the possibility of long-term postoperative pain relief and early rehabilitation of patients. Recently, many works have appeared indicating their preferred use in coloproctological practice both in patients with coronary artery disease, which allows not only to reduce the number of postoperative complications, but also to improve the outcome of surgical treatment in general. [1, 4, 6, 10]

For anesthetic support of coloproctological operations in patients with concomitant CVD, anesthesia methods should be used that have a minimal effect on hemo- and cardiodynamics, which reduces the risk of ischemic and other cardiovascular complications [1, 9, 10].

Positive effects of saddle spinal anesthesia in a similar group of patients

An effective method of anesthesia is saddle spinal anesthesia for coloproctological operations in patients with concomitant cardiovascular diseases. The results of several meta-analyses convincingly indicate a safer course of saddle SA compared to classical SA [9]. Non-invasive assessment of hemodynamic parameters by impedance rheography shows the absence of a negative effect of this technique on the circulatory system, as well as an improvement in oxygen delivery parameters [7, 8, 10].

Benefits of regional anesthesia:

- High efficiency and anti-stress protection;
- No need for tracheal intubation and mechanical ventilation

- Optimization of postoperative pain relief (with prolonged spinal blockade)
- Reducing the likelihood of postoperative complications (thromboembolic, pulmonary, etc. - compared with general anesthesia) [7].

Negative effects of regional anesthesia on CVS:

-Local anesthetics in toxic doses can affect myocardial contractility, heart rate and peripheral vascular tone. Local anesthetics, depending on the dosage, cause more or less pronounced bradycardia due to the ingress of a local anesthetic into the general circulation [1, 5, 6].

- Due to the antinociceptive blockade accompanied by a transient sympathetic block, peripheral arteriovenodilation may occur, which will lead to hypotension and a decrease in inflow to the right heart, the blood supply of which is critically dependent on the patient's position on the table and the BCC.

- All local anesthetics reduce the force of heart contractions and cause dilation of the arteries, which leads to arterial hypotension.[1, 5]

- Cardiovascular collapse and death only occur when high doses of local anesthetics are used [9]

Thus, the prospect of development of this direction is becoming more and more obvious due to a number of problems that are currently insufficiently studied:

- the impact on the main life support systems of sympathetic-adrenal blockade on the example of SA in patients with concomitant cardiovascular diseases in coloproctological practice, which requires further scientific research.

- the degree of risk of perioperative complications with saddle anesthesia has not yet been sufficiently studied.

- the optimal, safe dose of local anesthetic for saddle spinal anesthesia in patients with concomitant cardiovascular diseases has not been determined.

- the need to develop algorithms for the use of saddle anesthesia in coloproctological patients with concomitant cardiovascular pathology.

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