Clinical case

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CLINICAL CASE OF DELIVERY OF A PREGNANT WOMAN WITH LARGE UTERINE LEIOMYOMA AND REHABILITATION IN THE POSTOPERATIVE PERIOD

A – research concept and design; B – collection and/or assembly of data; C – data analysis and interpretation; D – writing the article; E – critical revision of the article; F – final approval of the article

Abstract. Uterine leiomyoma is a benign neoplasm of the smooth muscles of the uterus, which is one of the causes of infertility and miscarriage in women in the modern world. Delivery of pregnant women with large uterine leiomyoma is a current problem, since there is no single and clear opinion regarding the tactics of managing such patients. In the past, most specialists were inclined to perform hysterectomy after cesarean section, as they considered it the safest method of therapy, since myomectomy during cesarean section raised many questions related to complications during surgery and in the postoperative period. This article examines the modern view of specialists and the experience of the authors on organ-preserving tactics for the treatment of large uterine leiomyomas in women during pregnancy and delivery and analyzes rehabilitation in the postpartum period.

The aim of the study. The aim of the study was to analyze scientific literature data on the advisability of performing myomectomy during cesarean section and combining the experience of other specialists with our own experience of delivery of pregnant woman with large uterine leiomyoma using a complex of intraoperative preventive measures.

Materials and methods. A clinical case of delivery of a pregnant woman with large uterine leiomyoma and rehabilitation in the postoperative period is described. A systematic online study of articles on the topic of myomectomy during cesarean section was conducted.

Results and discussion. Data from a significant number of works by other specialists indicate that preliminary substantiation of factors that may complicate surgical intervention (uterine contractility, anatomical localization, number and diameter of fibroids, as well as the presence of large vascular structures), the use of a set of preventive intraoperative measures and modern suture materials can reduce the amount of blood loss and prevent unfavorable postoperative results. Our proposed algorithm of action, including the administration of tranexamic acid before opening the anterior abdominal wall, a long-acting oxytocin agonist and the hemostatic sponge «Surgicel», allows us to minimize the amount of intraoperative bleeding and the risks of uncontrolled bleeding. It should also be noted that the addition of a cesarean section with myomectomy does not affect the course of rehabilitation in the postoperative period.

Conclusions. Based on a study of literary sources over the past 10 years and our own research, we can conclude that myomectomy during cesarean section is advisable in the absence of contraindications. A combination of postoperative rehabilitation measures, tactics and techniques of surgical intervention, and prevention of intraoperative blood loss make it possible to ensure high-quality recovery for patients.

KEY WORDS: *uterine leiomyoma, pregnancy, complications, caesarean section, conservative myomectomy, rehabilitation*

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INTRODUCTION

An actual problem of modern obstetrics is the high incidence of uterine leiomyoma among women of reproductive age. Thus, according to D.W. Onyang, E.R. Norwitz (2014), the prevalence of uterine leiomyoma among pregnant women reaches up to 10.7 %, depending on the trimester of pregnancy, while in women aged 35 to 42 years, the incidence increases by 20 % (from 19 to 25 years old – up to 12 %, from 35 to 42 years old – up to 32 %). This is due to an increase in the number of late pregnancies, which may be complicated by the presence of fibroids or previous myomectomy [1–3]. In addition, most studies indicate the possibility of progressive growth of leiomyomas during pregnancy, which may be due to changes in hormone levels. The authors of scientific works note that the average increase in the volume of the fibroid is 12.6 %, while the maximum indicators can reach 25 % of the initial values [2]. In this regard, Vergani et al. (2007) in their retrospective cohort study found that the risk of cesarean section before labor could increase by 26 % for every 1 cm increase in leiomyoma diameter [7]. Leiomyoma with a diameter of 10 to 14 cm is considered a large nodule, and from 15 cm or more – a giant nodule. Moreover, in terms of localization, fibroids are found with approximately the same frequency (subserosal, interstitial, submucosal and along the anterior or posterior wall of the uterus).

Approximately 10–30 % of women with uterine fibroids develop complications in early or late pregnancy [3], such as placenta previa, premature placental abruption, fetal growth restriction [2, 4], cervical insufficiency, postpartum hemorrhage, which is associated with uterine atony and can serve as a basis for postpartum hysterectomy [4–6]. Also, uterine leiomyoma is a risk factor for cesarean section [2, 5, 24], which is associated with multiple fibroids, large fibroids > 5 cm, submucosal fibroids and fibroids in the lower segment of the uterus [2].

However, the key issue is the advisability of performing myomectomy during cesarean section. Some researchers indicate a specific list of indications for this surgical intervention. These include:

- the presence of subserosal fibroids on a thin base in any accessible place of the uterus;
- broad-based subserosal fibroids (except for those located on vascular bundles and in the lower segment of the uterus);
- the presence of no more than 5 large subserosal fibroids (more than 10 cm);
- leiomyomas located intramurally or with centripetal growth, more than 10 cm in size (no more than one fibroid);
- leiomyomas of different locations with sufficient access to them, except for intramural fibroids less than 5 cm in size.

At the same time, if premature abruption of a normally located placenta with acute blood loss or intraoperative acute blood loss occurs, myomectomy during cesarean section is not advisable. It is also not recommended to perform this surgical intervention in pregnant women with severe anemia. According to researchers, blood loss increases the risk of postpartum hysterectomy [8] and can be associated not only with the above-mentioned conditions, but also directly with leiomyoma and uterine atony [9–12, 23].

In addition, one of the key issues is rehabilitation after myomectomy during cesarean section. Davis et al. in their studies opposed the removal of large subserosal or intramural fibroids, as this led to intraoperative

complications and difficult postoperative rehabilitation [15]. However, Roman et al., taking into account their own practice, showed that there were no significant differences in the course of the postoperative period between the group in which a cesarean section with myomectomy was performed and the group without extensive surgery. Also, the duration of surgery and hospitalization was approximately the same [16, 17, 21].

Goyal et al. (2021) in their meta-analysis suggest that myomectomy during cesarean section is associated with a clinically nonsignificant increase in operative time, blood loss, and hospital stay, especially for larger leiomyomatous nodules. However, preference should be given to surgical intervention, as it prevents the risk of complications associated with uterine leiomyoma in subsequent pregnancies, accelerates postpartum involution and prevents the development of menorrhagia, pain and anemia [13, 14, 19, 22].

Considering the above, it can be concluded that myomectomy can be safely performed during cesarean section if the following factors are first taken into account: uterine contractility, anatomical location, number and diameter of leiomyomas, as well as the presence of large vascular structures.

CLINICAL CASE

Pregnant S., 37 years old, at 39 weeks of gestation, was hospitalized in the maternity department of the Perinatal Center of the Clinical Hospital № 6 in Dnipro with complaints of constant aching pain in the lower abdomen. From the anamnesis it was established that uterine leiomyoma was first diagnosed 2 years before pregnancy, no treatment was carried out. At 14–15 weeks of pregnancy, she was in the department of pathology of pregnancy for treatment regarding the threat of miscarriage, where moderate anemia was discovered and treatment with iron supplements in a therapeutic dose was prescribed. At 29 weeks of pregnancy, the patient received an injection of Anti-D (rh) immunoglobulin due to her Rh-negative blood type.

Objectively upon admission: general condition is satisfactory, the skin and visible mucous membranes are pale pink, the tongue is moist and clean; peripheral lymph nodes are not enlarged. Body temperature – 36.7°C; pulse – 77 bpm; blood pressure – 120/70 mm Hg. The mammary glands are soft, painless on palpation. The abdomen is unevenly enlarged until 39 weeks of gestation due to the pregnant uterus. At the bottom and left side wall of the uterus, a large leiomyoma is detected, with a diameter of more than 18 cm. On palpation, the uterus is hypertonic, and there is no regular labor activity. The position of the fetus is longitudinal, the head is above the entrance to the pelvis, the heart rate is 140 bpm. No amniotic fluid was released.

According to internal obstetric examination: the external genitalia are developed correctly, the vagina is narrow. The cervix is soft, 0.5 cm long, centered, the external os allows 1 finger to pass through (dilation 2 cm), the amniotic sac is intact. The discharge is mucous.

***Preliminary diagnosis*:** Pregnancy I, 39 weeks. Cephalic presentation. Large uterine leiomyoma.

In order to establish a clinical diagnosis, a complete clinical and laboratory examination was prescribed. According to ultrasound data: in the uterine cavity there is one live fetus in the cephalic presentation; fetometric and doppler indicators in the umbilical cord arteries and middle cerebral artery are within normal limits; at the fundus of the uterus with a transition to the left side wall, a subserosal-intramural leiomyoma, type V according to the FIGO 2018 classification, with dimensions of 187×165×205 mm, is visualized.

According to laboratory blood parameters: blood type – A (II) Rh- (negative), Rh antibodies were not detected; Hb – 97 g/l, erythrocytes – 3.6×10^{12}/l, platelets – 230×10^{9}/l, leukocytes – 10.7×10^{9}/l, s/n – 70 %, r/n – 7 %, ESR – 17 mm/hour. Coagulogram: prothrombin time – 15.8″, prothrombin index – 85 %, plasma fibrinogen – 3.1 g/l, fibrinogen B – negative.

Biochemical characteristics of the pregnant woman's blood are within normal limits.

***Clinical diagnosis*:** Pregnancy I, 39 weeks. Cephalic presentation. Large uterine leiomyoma. Anemia during pregnancy, moderate severity. Rh-negative blood type, without sensitisation.

In order to determine the method of delivery for the pregnant woman, a perinatal consultation was carried out and, taking into account the location of the leiomyoma and the

size of the uterus, as well as the threat of ischemia of the fibroid, it was decided to perform an urgent cesarean section with a conservative myomectomy.

Tranexamic acid 800 mg was injected intravenously at a rate of 10 ml/kg and laparotomy was performed according to Pfannenstiel with a cross section in the lower segment of the uterus according to Gusakov. A live full-term male fetus weighing 3300 and height 57 cm with an Apgar score of 8–9 points was removed.

The placenta was removed by traction of the umbilical cord, and 1 ml of carbetocin was administered for uterotonic purposes. The uterine incision was sutured with a continuous double-row vicryl suture. During an examination of the abdominal organs, a serous-intramural leiomyoma with dimensions of 180×160×200 mm was discovered, localized at the fundus and left side wall of the uterus. Uterine appendages without pathological changes.

Within the healthy myometrium, a conservative myomectomy was performed without penetration into the uterine cavity, the bed was sutured with separate vicryl sutures in two rows, and a «Surgicel» hemostatic sponge 5×7.5 cm was introduced. Ischemia of the leiomyoma was confirmed by pathohistological examination.

Peritonization due to the serous membrane of the uterus. Hemostasis control is fully effective, the uterus has shrunk, and the abdominal cavity has been drained. Blood loss – 1300 ml. Infusion-transfusion therapy was performed. The duration of the operation is 90 minutes.

The course of the postoperative period and uterine involution were unremarkable. The first day (24 hours) after surgery was spent in the intensive care unit. Urinary control was carried out in the first 6 hours, followed by removal of the urinary catheter. In order to prevent the development of pelvic peritoneal adhesions, the patient was early mobilized for the 7th hour of her stay in the ICU ward. The beginning of early breastfeeding, promoting a reflex contraction of the smooth muscles of the uterus. On the second day, the patient was transferred to the mother-child ward. Thromboprophylaxis was performed for 7 days. The patient was discharged on the 7th day after surgery in satisfactory condition with a living child under the supervision of a doctor at the antenatal clinic.

CONCLUSION

Myomectomy during cesarean section is controversial due to the possibility of complications.

The use of a complex of intraoperative preventive measures and modern suture materials can reduce the amount of blood loss and prevent unfavorable postoperative results.

Our proposed algorithm of action, combining the use of tranexamic acid before opening the anterior abdominal wall, a long-acting oxytocin agonist and the hemostatic sponge «Surgicel», allowed us to minimize intraoperative blood loss, reduce the risk of uncontrolled bleeding and hysterectomy. In addition, during observation of this case in the postoperative period, physiological involution of the uterus, absence of bleeding, purulent-inflammatory complications and healing of the postoperative wound by primary intention were noted, which makes it possible to conclude myomectomy during cesarean section is an appropriate method provided that contraindications to its use are excluded.

Also, taking into account the results of the study, we can conclude that there is no significant difference between rehabilitation after a conventional cesarean section and one complicated by myomectomy. Harmonization of postoperative rehabilitation measures, tactics and techniques of surgical intervention and prevention of intraoperative blood loss allows for high-quality recovery and does not complicate the postpartum period.

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КЛІНІЧНИЙ ВИПАДОК ПОЛОГОРОЗРІШЕННЯ ВАГІТНОЇ З ЛЕЙОМІОМОЮ МАТКИ ВЕЛИКИХ РОЗМІРІВ ТА РЕАБІЛІТАЦІЇ В ПІСЛЯПОЛОГОВОМУ ПЕРІОДІ

A – концепція та дизайн дослідження; B – збір даних; C – аналіз та інтерпретація даних; D – написання статті; E – редагування статті; F – остаточне затвердження статті

Анотація. Лейоміома матки – це доброякісне новоутворення з гладенької мускулатури матки, яке є однією з причин безпліддя та невиношування вагітності у жінок в сучасному світі. Пологорозрішення вагітних з лейоміомою матки великих розмірів є проблемою сьогодення, так як немає єдиної чіткої думки щодо тактики ведення таких пацієнток. У минулому більшість фахівців схилялося до проведення гістеректомії після кесаревого розтину, через те що вважали її найбільш безпечним методом терапії, так як міомектомія під час кесаревого розтину викликала багато питань, пов'язаних з ускладненнями під час оперативного втручання та в післяопераційному періоді. Дана стаття розглядає сучасний погляд спеціалістів та власний досвід авторів з органозберігаючої тактики лікування великих лейоміом матки у жінок під час вагітності та пологів і аналізує реабілітацію в післяпологовому періоді.

Мета дослідження. Метою дослідження був аналіз даних наукової літератури щодо доцільності проведення міомектомії під час кесаревого розтину та поєднання досвіду інших спеціалістів з власним досвідом пологорозрішення пацієнтки з лейоміомою матки великих розмірів при застосуванні комплексу інтраопераційних профілактичних заходів.

Матеріали та методи дослідження. Описано клінічний випадок пологорозрішення вагітної з лейоміомою матки великих розмірів та реабілітації в післяпологовому періоді. Проведено систематичне онлайн-дослідження статей на тему міомектомії під час кесаревого розтину.

Результати і обговорення. Дані значної кількості робіт інших фахівців свідчать про те, що попереднє обґрунтування факторів, які можуть ускладнювати оперативне втручання (скоротливість матки, анатомічна локалізація лейоматозних вузлів, їх кількість та діаметр, а також наявність великих судинних структур), застосування комплексу інтраопераційних профілактичних заходів та сучасних шовних матеріалів дозволяє зменшити об'єм крововтрати та запобігти несприятливим післяопераційним результатам. Запропонований нами алгоритм дій, який включає введення транексамової кислоти перед проведенням розтину передньої черевної стінки, агоністу окситоцину тривалої дії та гемостатичної губки Surgicel, дозволяє мінімізувати об'єм інтраопераційної кровотечі та ризики неконтрольованої кровотечі. Також слід зазначити, що доповнення кесаревого розтину міомектомією суттєво не впливає на перебіг реабілітації в післяопераційному періоді.

Висновки. На основі проведеного дослідження літературних джерел за останні 10 років та власних досліджень, можна зробити висновок, що міомектомія під час кесаревого розтину є доцільною, за відсутності протипоказань. А поєднання заходів післяопераційної реабілітації, тактики та техніки оперативного втручання, профілактики інтраопераційної крововтрати дозволяють забезпечити якісне відновлення пацієнток.

КЛЮЧОВІ СЛОВА: *лейоміома матки, вагітність, ускладнення, кесарів розтин, консервативна міомектомія, реабілітація*

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