

## CASE REPORT / ПРИКАЗ БОЛЕСНИКА

# Large myomas as a complicating factor necessitating cesarean myomectomy followed by cesarean hysterectomy

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## SUMMARY

**Introduction** Although uterine myomas are becoming more common in pregnancies due to advanced maternal age, the literature lacks reports on complications, such as hysterectomy following cesarean myomectomy (CM).

The aim of this work was to describe when CM is inevitable, complicated by severe intrapartum hemorrhage and requiring a hysterectomy.

**Case outline** A pregnant, with a term pregnancy and large multiple myomas, was referred for elective cesarean section (CS). During the CS, forced enucleation of a 100 mm anterior and left myoma previa (pre-fetal extraction) was necessary, and a 2,800 g neonate was delivered through the lower uterine segment incision. After the delivery and another CM, it was necessary to stop a massive hemorrhage from the myometrial myoma bed. Following provisory suturings of the hysterotomies, an urgent hysterectomy was performed with left salpingo-oophorectomy, due to a large hematoma in the left retroperitoneal space. The patient's further recovery was uneventful and she was discharged with her baby on the sixth postoperative day. The histopathology report revealed a 135 × 190 × 150 mm uterus, weighing together with the enucleated myomas and left adnexa 5,000 g in total. The weight of the enucleated myomas was 1,670 g. The histopathological examination also showed 12 intramural and subserous myomas in the myometrium, ranging 30–190 mm.

**Conclusion** Large myomas, especially previa, may present a serious problem for fetal extraction during a CS. Therefore, the authors suggest an informed consent for CM, in patients who should undergo a CS. Additionally, such patients should be counseled about the possibility of an intrapartum hysterectomy.

**Keywords:** myoma; pregnancy; complication; delivery

## INTRODUCTION

During the past two decades, numerous studies on cesarean myomectomy (CM) have been published, mainly promoting its safety and feasibility [1, 2]. Despite myomas being the most frequent benign tumors of the female reproductive organs and the cesarean section (CS) the most common surgery in women, the literature lacks reports on cesarean hysterectomy following a CM [3, 4].

In the era of favoring CM, one of the possible reasons for the lack of such reports might be the obstetricians' reluctance to publish unfavorable outcomes, even if intrapartum hysterectomy is absolutely necessary and justifiable. This could possibly further lead to the greater promotion of CM, as an uncomplicated obstetric surgery, and its implementation even in cases when interval myomectomy would be a safer option.

Thus, the aim of the presented report is to underline the possibility of intractable hemorrhage following an inevitable CM, and the

necessity of cesarean hysterectomy due to multiple large myomas.

## CASE REPORT

A 36-year-old primipara was referred to the university-affiliated hospital in the 38th week of gestation for an elective CS due to myoma previa and oblique lie. Prior to her referral, the patient had been diagnosed with large multiple myomas (Figure 1), which were sonographically confirmed after her admission (Figure 2). The pregnancy course was uneventful, with appropriate fetal growth, development, and oxygenation. Prior to the CS, the patient was informed about the possibility of an inevitable myomectomy during the CS and the likelihood of massive hemorrhage after fetal extraction. Moreover, prior to the surgery, an informed consent was obtained for a CM and possible cesarean hysterectomy.

As intraoperative hemorrhage was expected, intraoperative cell salvage was implemented

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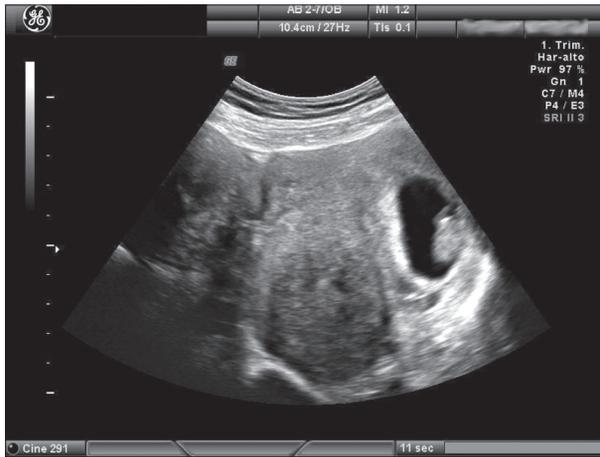
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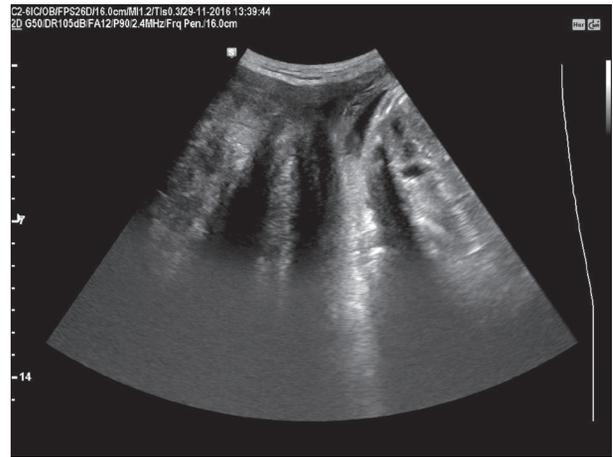
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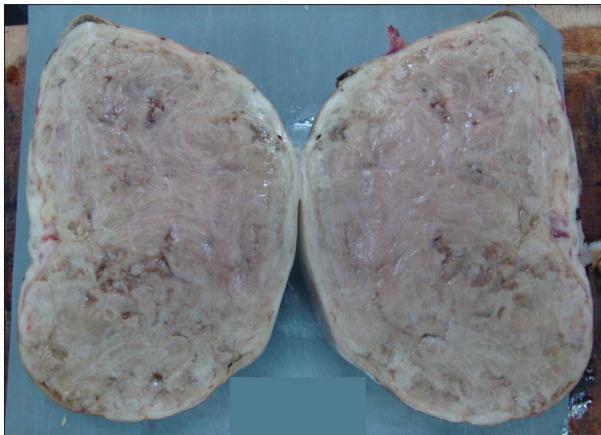
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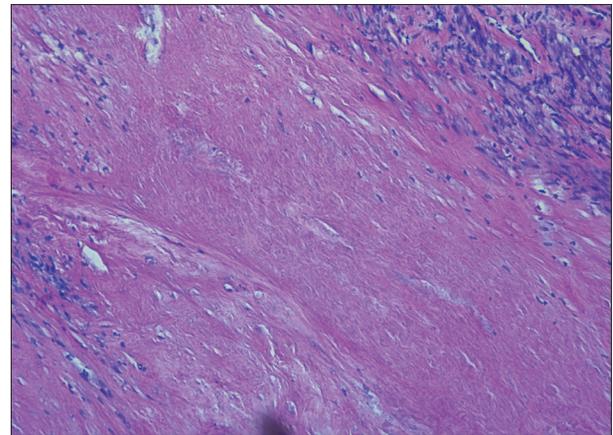
**Figure 1.** Multiple myomas in the uterus at seven weeks of pregnancy



**Figure 2.** A large myoma during a scan at term pregnancy



**Figure 3.** Macroscopic section of a myoma enucleated during a cesarean section



**Figure 4.** Microscopic image of a histologic section of a fibroid with hyalinization (H&E)

from skin incision and further on. During the CS, a 100 mm anterior and left subserosal myoma previa was enucleated, and a 2,800 g neonate was delivered through the lower uterine segment (LUS) incision used for CM. A corporal incision without myomectomy was not possible without an additional myomectomy of another myoma, which was 120 mm in diameter, on the anterior wall and to the right (Figure 3). Following delivery, massive hemorrhage from the myoma previa site was encountered. Neither LUS suturing nor further hysterectomy was possible without the additional myomectomy of the anterior and right subserosal myoma, which was performed through another hysterotomy. Following provisory suturing of both incisions, a necessary hysterectomy was performed. Due to hematoma formation starting from the myomectomy site to the left into the retroperitoneal space, a contemporary left salpingo-oophorectomy was performed. The surgery lasted 185 minutes and was performed by two senior surgeons. During the operation, the patient received a total of 1,700 ml of autologous blood collected by cell salvage, 1,325 ml of heterologous blood, 1,250 ml of fresh frozen plasma, and 20 units of cryoprecipitate together with colloid and crystalloid solutions. After the hysterectomy, she spent two days in the obstetric intensive care unit without further blood transfusion. The patient's further recovery

was uneventful, and she was discharged with her baby on the sixth postoperative day.

The histopathology report revealed a  $135 \times 190 \times 150$  mm uterus, weighing together with the enucleated myomas and left adnexa 5,000 g in total. The weight of myomas that were enucleated was 1,670 g. There were also 12 intramural and subserous myomas left in the uterus with a diameter of 30–190 mm in range, and some of these with hyaline degeneration (Figure 4).

## DISCUSSION

Although the obstetric textbooks generally consider CM to be a risky procedure, there is a consensus in modern obstetric literature about it being relatively safe, if performed by experienced obstetricians and in selected cases [1]. Most researchers agree on its benefits and advise it in cases of pedunculated and subserous myomas, anterior wall myomas, and particularly, if an additional incision for myoma enucleation is not required [5]. CM is also recommended for a safe fetal extraction when myomas compromise the hysterotomic site or hysterorrhaphy, or to prevent uterine torsion [5, 6]. The literature also showed that CM is inevitable in some instances, despite the risk of

perioperative complications [6]. Our case supports these observations, as the delivery of the fetus was not possible either through LUS or through corporal uterine incision without a prior myomectomy. In such cases, with limited access to a normal myometrium, the decision to enucleate myoma previa and deliver the baby through LUS, or even through the corporal incision, is justifiable. Nevertheless, in the presented case, another hysterotomy and a myomectomy were necessary to create the surgical space for urgent hysterectomy.

As already described in the literature, myomas in the proximity of uterine vessels represent a significant risk factor for massive hemorrhage, which was confirmed in our case by the hematoma spreading into the left retroperitoneal space [5]. This also forced a left adnexectomy with a hysterectomy.

Looking at the literature of more than a century ago, Spencer [7] was most probably the first who indicated that total abdominal hysterectomy after a CS is the best available method to ensure the uneventful recovery of patients affected by large myomas in pregnancy. In his report published in 1909, he underlined that “it will usually be wise to remove the uterus, especially if it is the seat of multiple tumors.”

Although modern medicine nowadays provides obstetricians with a significant number of options to avoid cesarean hysterectomy in cases of a myomatous uterus, it remains necessary in some instances to achieve definite hemostasis and to ensure the mother's uneventful recovery.

Despite the growing number of reports on CM safety and its feasibility, data on cesarean hysterectomy as a complication are quite infrequent. A recent meta-analysis on CM safety included 1,082 patients with myomas, who were delivered by a CS; out of these, 443 had a CM without a hysterectomy [2]. Moreover, hysterectomy reports are present more commonly as isolated case reports, rather than in CM studies [8, 9].

Thus, our extensive literature search revealed few reports on cesarean hysterectomy following CM. Li et al. [10] evaluated a total of 1,438 women with myomas who were delivered by a CS. Out of these, 51 (5.3%) had a hysterectomy after a CS mainly due to multiple myomas, which were

present in 84.3% of the cases. The mean diameter of the myomas was  $81 \pm 39$  mm. The authors did not report any postoperative complications in these 59 patients. Exacoustos and Rosati [8] evaluated ultrasonographically documented myomas in relation to complications during pregnancy, at delivery and in the puerperium. Out of 492 pregnant women with myomas, nine underwent a myomectomy at delivery, of which three had had a hysterectomy due to severe hemorrhage. Another study from Ghana investigated the indications and outcomes of relaparotomy after a CS [9]. Out of 44 relaparotomies, three (7%) were performed for hemorrhage following a CM. There were four maternal deaths in the study. Out of these, one woman had a CS for transverse lie and myomectomy. She was referred within one hour, transfused with three units of blood and “when she appeared stable she was reopened and hysterectomy was successfully performed.” The patient died 12 hours after reoperation due to disseminated intravascular coagulopathy.

Pattanaik et al. [11] analyzed the clinical outcomes of CM in 23 patients with an average age of 31.2 years, mostly primigravidas with term pregnancies. Intraoperative blood loss was over one liter in 19 (82.6%) patients, of whom one required subtotal hysterectomy. Tian et al. [12] presented their experience with a series of cervical myomas in 17 women, of whom nine had a CM. One of these women had a myomectomy due to the inability to suture uterine incision. Because of massive intraoperative hemorrhage (about 4,200 ml) occurring after the myomectomy, the patient underwent a cesarean hysterectomy.

The true incidence of cesarean hysterectomy as a procedure associated with CM remains unknown. The most probable reason for this is under-reporting, since literature on CM is abundant and there are only a few reports on cesarean hysterectomy.

Myomas may present an obstacle for fetus delivery during a CS. Therefore, it would be appropriate to obtain informed consent for CM from all women undergoing a CS, in case this procedure is inevitable. Furthermore, such patients should be counseled about the necessity of an immediate hysterectomy in cases of large multiple myomas and/or uncontrollable massive intraoperative hemorrhage.

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## Хистеректомија као компликација великог миома и неопходне миомектомије током царског реза

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### САЖЕТАК

**Увод** Миоми утеруса се све чешће срећу у трудноћи због година старости мајке. Мало је публикација о хистеректомији као компликацији миомектомије током царског реза. Циљ овог рада је био да прикаже неизбежну миомектомију током царског реза, компликовану тешким интрапарталним крварењем које је захтевало хистеректомију.

**Приказ болесника** Трудница у терминској трудноћи, са великим мултиплим миомима, упућена је на порођај елективним царским резом. После неопходне енуклеације миома превија од 100 mm лоцираног напред и лево (пре екстракције фетуса) новорођенче телесне масе 2800 g је порођено кроз инцизију у пределу истмичног сегмента. После порођаја и додатне миомектомије, опсежно крварење из ложе миома у миометријуму је заустављено, али због развоја великог хематома у левом ретроперитонеал-

ном простору урађена је хитна хистеректомија са левом салпингофоректомијом. Даљи опоравак је протекао без компликација и жена је отпуштена са дететом шестог постоперативног дана. Хистопатолошки преглед је показао димензије материце од 135 × 190 × 150 mm, тежине 5000 g са левим аднексама и миомима. Тежина енуклеисаних миома била је 1670 g. Хистопатолошки преглед је показао 12 интрамуралних и субсерозних миома у миометријуму, димензија од 30 до 190 mm.

**Закључак** Велики миоми, нарочито миоми превија, могу представљати озбиљну потешкоћу при феталној екстракцији током царског реза. Због тога је неопходан преоперативни пристанак жене за миомектомију током царског реза, али оне морају и бити обавештене о могућности хистеректомије.

**Кључне речи:** миом; трудноћа; компликација; порођај