MYOMECTOMY IN THE PREGNANT

It has been done a research with 28 pregnant females in various terms, with hysteromyoma, who had conservative myomectomy done. The indications for the operation were: incurable threat of abortion, rapid growth, trophopathy, necrosis of myoma, desired pregnancy. This kind of intervention is characterized as the last reserve for maintenance of pregnancy. The pregnancy was terminated at various terms with 4 (14.3%) patients while the rest were able to bear at full term and the delivery was done through Caesarian section. There was no forced hysterectomy in either case and there was not uncontrolled bleeding, intraoperatively.

**Keywords:** Hysteromyoma, pregnancy, conservative myomectomy.

**UDC:** 618.14-006

**Introduction**

The possibility of preservation of the reproductive organ in those suffering from hysteromyoma (HM), out of pregnancy, is based on somewhat extraneous factors that form a certain pathology model. This is why the out-of-pregnancy treatment of HM is getting rather clear operative content (Landekhovsky, 2002). However, the question of combination of HM and pregnancy still contains a number of debatable aspects. How often does a necessity appear of carrying out of conservative myomectomy (CM) among the pregnant? The practice proves that with time the topicality of the question increases in relation to rejuvenation of the disease, late realization of the reproductive function, appearance of complications of HM and pregnancy, also the increased number of the patients with a much desired pregnancy against the background of HM.

The rate of HM in pregnancy comes to about 4% (Bartosova et al., 2008). The size of the myoma tends to increase during pregnancy, especially at the first and second trimester. These changes are more expressed with the females who had bigger body weights before getting pregnant (De Vivo et al., 2011).

The complicated course of pregnancy combined with HM is seen in 81.2% of cases, the threat of abortion being the most frequent; in 39.6% of cases it is developed the fetoplacental insufficiency, while the most serious complication is trophopathy and necrosis of the myomatous node, the rate of which varies from 6%-18% (Titchenko, 2007). The development of thrombosis in the vessels feeding the myoma followed by their compression and flexure as the tumor grows is the common cause of necrosis (Bartosova et al., 2008).

There are few works dealing with myomectomy in pregnancy and most of them are just descriptions of single cases from practice. In the middle of the last century, the surgical treatment of myomas during pregnancy often had a failure, while the enucleation of intramuscularly located nodes resulted in abortion in 25-43% of cases (Zakharyeva et al., 1980). At present, it is considered that the technical performance of myomectomy allows carrying it out within the period of pregnancy without the danger for the condition of the mother and foetus (Logutova et al., 1999); though in all the published cases it was stressed the great importance of high qualification required of surgeons. The authors point to special features of CM during pregnancy: the high risk of big blood loss because of expansion of the vasculature, the necessity of especially careful forming of the scar that must be able to stand the dilatation with the later terms of pregnancy, and the observance of minimal traumatizing of the foetus. This group of authors has only used the intermedian laparotomy, without fixation of the uterine body. The surgical intervention is...
considered to be optimal at the terms of 16-20 weeks. At the same time, the results of CM are given for the first and second trimester. According to Bonito et al. (2007) all the 5 operated patients had no complications over the posterior course of pregnancy, while with 2 of them it was used the Cesarean section, at the full term. Adeyemi et al. (2007) report of a successful CM done to a 27-years-old female at the pregnancy of 18 weeks. During the laparotomy it was removed a giant subserous leiomyoma going beyond the small pelvis as far as abdominal cavity. Bartosova et al. (2008) describe the hysteromyomectomy in relation to developed necrosis of the tumor and intestinal obstruction with the female of 36 years-old at the 22nd week of gestation; it was removed a fibromyoma weighing 2200 g. Suwandinata et al. (2008) removed a myoma with a female at the 18th week of gestation complaining of intense abdominal pains, with the use of the modified surgical technique including, at the first stage, the interrupted suturing around the myoma, for hemostasis; the posterior course of pregnancy was without complications. Bhatla et al. (2009) successfully removed a subserous myoma weighing 3900 g at the second trimester of gestation that had been causing strong symptoms of compression of abdominal organs and subacute intestinal obstruction. Fanfani et al. (2010) had a successful laparoscopic CM at the 25th week of gestation and removed a big subserous myoma. They consider this kind of intervention as an alternative to traditional laparotomy. And yet, because of the risk of abortion and uncontrolled bleeding, which might require hysterectomy to be done, the major part of CMs with the pregnant is performed during the Cesarean section (CS). Kustarov et al. (2001) have presented the results of CM in the CS operation with 14 patients. It is also given a description of successful removal of an intramural myoma during CM with a primipara, 34 (Abasiattai et al., 2009). Hassiakos et al. (2006), being based on the results of 47 cases of combination of CS and CM, consider that such a combination does not affect significantly the intra- and postoperative treatment and may be recommended for a wide application. Li et al. (2009), having generalized the results of 1242 cases of CM, performed during CS, did not find any apparent complications and concluded this intervention during CS to be a safe and effective method. Same conclusion was achieved by Park и Kim (2009) who generalized the results of 97 cases of CM, performed during CS. They did not find any serious complications, excepting that with the size of the myoma being more than 6 sm the operation time got extended. Bilateral application of ligatures on the uterine arteries during CS and CM is considered to be a promising method as it reduces the blood loss and minimizes the necessity of hysterectomy. The supposition that ligation of arteries does not affect the fertility in the future was proposed by Liu et al., 2006. At the same time, there are reports of normal spontaneous delivery with a primipara, 39, who had had extensive CM within the period of pregnancy (Dracea, 2006).

The nascent myomatous nodes are a rarity with pregnancy. The vaginal CM of cervical myoma is considered to be a safe method, but the excision of the submucous myoma that way is related to possible rupture of the fetal membranes and bleeding (Kilpatrick et al., 2010).

At present, as indications for hysterectomy with myoma considered are: multiple myoma with various localizations of big nodes; the age of over 40; infection of the node; multiple myoma with the patients who had CM done previously (recurrence); intramural localization of the uterine nodes with a topographic and technically difficult access for carrying out the CM; localization of the myoma’s nodes on the vascular fascicle. Multiple myoma with a low localization of the nodes coming out of the uterine neck or coming to its isthmus, malignization of the node are indications for uterectomy (Kulakov and Shmakov, 2001).

Thus, the tactics of treatment of the pregnant with myomas is one of most difficult issues in obstetrics and gynecology; it requires working out of the clear criteria for conservative and operative methods of treatment, also optimization of the technique of performing of CM, which would allow the maintenance of pregnancy and preservation of the genital organ. When choosing a tactics for the surgical way of treating HM among the pregnant, probably, most important is introduction of objective argumentations on the most of all
discussed questions: what is better, to apply to induced abortion, to carry out a CM after a while, and only after that to allow the woman having a pregnancy? (Buyanova et al., 2003); another option is carrying out a CM against the background of pregnancy, with clinical orientation towards its maintenance; finally, the third way is using both tactics depending on the pathology model. The latter choice seems to be most logical and in the nature of a compromise. However, it requires making of comprehensively balanced pathology models, coordination and consensus of their contents among the home and international specialists. Otherwise, the whole problem will be remaining out of recordable clinical strategy, as it was before. Besides, the issues of safety of CM during pregnancy and of optimization of treatment of the pregnant with complicated forms of myoma (ischemia, necrosis of tumor) still demand a solution.

The presence of quite a big number of questions on the topic is caused to a considerable degree by the small number of works in this area. That way, we consider the publications dealing with CM during pregnancy, especially with the technique of carrying out the operation (including the blood preserving aspects), maintenance of pregnancy in postoperative period etc., to be necessary, and the accumulation of such information will promote taking the common rational clinical positions.

Material and methods of research

Within the period from 2001-2007 we have observed 779 patients with hysteromyoma. Out of that number 86 (11%) were pregnant with the terms of 4-32 weeks. In this group, our attention was attracted to 28 (3.6%) females with the terms of gestation from 6-26 weeks. In all those cases it was a planned pregnancy; and this criterion was the main factor for forming that sample. With 18 out 28 patients the pregnancy had come after a long treatment of primary sterility. Out of 28 women 22 had been aware of presence of hysteromyoma before pregnancy, while with the rest it was detected during the actual pregnancy. The ages of the pregnant ranged from 24-32 years old, with the average of 26.7±2.1. All the women were registered in a maternity clinic, and none of them had any heavy extragenital pathology. Out of 28 patients 21 were primiparae, including those with repeated pregnancy. Those secundiparae were in a number of 7; and there were no multiparae. All the 28 patients came in with intramural and intramural-submucous myomatous legged nodes. The node sizes ranged from 4.0 up to 18.0 cm in diameter, while the number of nodes varied from 1-4. The pregnant with subserous legged nodes, small single asymptomatic myoma, also with small-node diffuse lesion of myometrium, as well as those coming in with irreversible forms of pregnancy termination, were not included into consideration.

All the 28 patients were done CM, as the prospects of pregnancy progress were dubious due to: rapid growth of myomatous nodes over the course of actual pregnancy, signs of trophopathy of myomatous nodes, absence of positive effects of preserving therapy. As a result of the carried out operations, pregnancy was preserved with 24 out of 28 females. With 4 patients pregnancy interrupted in 12-22 days after carrying out of CM, at the terms of 11-25 weeks. All the 24 women with preserved pregnancy bore at full term under our supervision. All of them had operative delivery (Cesarean section). There was no perinatal mortality. Neither postoperative complications nor spontaneous abortions were noted after CM.

Research results

Table 1 shows indications for operation; the pregnancy term at which the operation was done; the number of terminated pregnancies depending on the terms and indications for operation. Table 2 shows the rate of pregnancy termination after CM, depending on the main characteristics of myomatous growth.

As one can see from Table 1, it has been three major factors that made for indication for operation. At that, the danger of termination was present with all the patients, while
bloody discharge of a staining nature was only noted with 1 female at the pregnancy term of 24 weeks; it had been happening during 3-4 days, 8 days before the operation was done. The treatment of termination danger was started with all the patients under conditions of maternity clinic, 5-32 days before arriving at the hospital. With 13 out of 28 it was used pure gestagens, while ginipral was applied with 26 out of 28. None of the patients had the signs of danger of termination stopped preoperatively.

### TABLE 1. INDICATIONS FOR CONSERVATIVE MYOMECTOMY, SPONTANEOUS POSTOPERATIVE ABORTION DEPENDING ON THE PREGNANCY TERMS

<table>
<thead>
<tr>
<th>Indications for CM</th>
<th>Pregnancy term (weeks)</th>
<th>Spontaneously terminated pregnancy (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6-10 (n=12)</td>
<td>11-14 (n=10)</td>
</tr>
<tr>
<td>progressing danger of termination of pregnancy (n)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>trophopathy of myomatous nodes (n)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rapid growth of myoma (n)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>spontaneously terminated pregnancy (n)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TABLE 2. ABORTION AFTER CONSERVATIVE MYOMECTOMY DEPENDING ON SOME PARTICULARITIES OF MYOMATOUS GROWTH

<table>
<thead>
<tr>
<th>Level of lying and size of myomatous nodes</th>
<th>Number of myomatous nodes</th>
<th>Total number of patients (n=28)</th>
<th>Spontaneous abortion (n=4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single (n=21)</td>
<td>2-4 nodes (n=7)</td>
<td></td>
</tr>
<tr>
<td>intermuscular, without considerable capture of the vascular layer</td>
<td>9</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>intermuscular, with considerable capture of vascular layer</td>
<td>9</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>mostly in vascular layer</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>maximal sizes of myomatous node (cm):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-5</td>
<td>7</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>6-9</td>
<td>8</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>10-18</td>
<td>6</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>spontaneous abortion (n=4)</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

With all the 28 females it was noted the growth of myoma over the course of actual pregnancy. In 11 cases out of 28, however, we classified it as rapid growth for the following reasons. Out of those 11 females 8 had been aware of their myoma before the pregnancy came, while with 3 the myoma was detected for the first time during the actual pregnancy. The growth of myoma, exceeding its originally detected size two times as much was noted with 4 out of 8 patients, 3-4 times as much with 2 females, 5 times as much with 2 females. Out of 3 patients, whose myoma had been detected for the first time during pregnancy, the growth of tumor, registered in a maternity clinic, was: two times as much with 2 females, 3 times as much with 1 female. At that, it is only with 2 out of 11 patients that it was noted afferent growth of nodes, with deformation of the uterine cavity. In 7 cases out of 11, the nodes were located on the front wall and at the bottom of the body of womb, in 2 cases it was back wall, in 2 other cases it was front and back wall.
Trophopathy of myomatous nodes, registered clinically with 6 out of 28 patients, was verified with a histological study in all cases. With 5 out of 6 patients, the myoma was mono-nodular, of a big size (6-18 cm), lying deep and affecting the vascular layer of miometrium. With 1 out of 6 patients, against the background of pregnancy at term of 9 weeks, the tumor size in the bottom of the womb amounted to 18 cm in diameter, exceeding the originally detected during pregnancy size 5 times as much. During operation, the perimetrium was seen with inflammatory changes in the field of external pole of the tumor, and it was covered with a thin fibrin film, and it was soldered with lower pole of the greater omentum. With the rest of 5 patients, against the background of pregnancy term of 15-26 weeks, it was also noted a rapid growth of mono-nodular tumor 3 and 4 times as much compared to the established size at early terms of actual pregnancy. During operation, the perimetrium over the nodes was cyanotic, in 3 cases out of 5, but without the fibrin film, there were marked apparent foci of softening, hemorrhage areas, and the edema of myomatous node. None of 6 cases had suppurative complications because of trophopathy of myomatous nodes. In 4 cases out of 6 the myomatous nodes were located at the bottom and in the body of the womb; in 1 case it was uterotubal angle on the right, and in 1 case it was the back wall of the body of womb. In all cases, the study showed a moderate leukocytosis up to 11.0x10^9 ml, apparent irritation in leukogram, subfibrillity, irregularity of echo density up to echonegative foci in myomatous nodes, as seen with ultrasound scanning. In 5 cases out of 6 the myomatous nodes could be palpated, showing a deformation of the pregnant womb’s surface, and the most meaningful was the symptom of local painfulness in the area of location of the myomatous node.

As a result of the done operative treatment, it has been possible to preserve pregnancy up to full term with 24 females out of 28, while with 4 (14.3%) patients (2 with trophopathy of myoma and 2 with symptoms of rapid growth) the pregnancy aborted spontaneously in 12-22 days after applying of CM, at terms of 11-25 weeks (see Table 1). It should be noted that with the 4 mentioned patients the symptoms of danger of abortion disappeared gradually during next 3-7 days after operation, and those women were discharged from the emergency department to outpatient monitoring. Later, however, the signs of danger of abortion of pregnancy developed again, for unknown reasons, at terms mentioned above, and they failed to be arrested. All the 4 patients were put in our clinic repeatedly, against the background of spontaneous abortion in process. Abortion was happening without signs of deformation of the fresh scar on the uterus (clinical and ultrasound control). All patients were done instrumental revision of the cavity of uterus, after spontaneous abortion, under US control, during which with all the patients it was seen the scar area on the uterus leaving no doubt of its consistency. Post-abortive period passed without significant complications with all the patients.

With the rest of 24 patients, the dynamics of lysis of symptoms of danger of abortion (at nearest terms after operation) did not differ clinically from the one which was noted with the females with interrupted pregnancy. The level of blood loss, the duration of operative intervention, and the character of anesthetic means (all the patients were operated under endotracheal narcosis) didn’t differ either, in fact. At the same time, such factors as the size and number of myomatous nodes, the depth of localization of the tumor in the wall of womb, also its proximity to placenta - all that distinguished the group of the operated females with terminated pregnancy (See Table 2).

With 25 out of 28 patients the operation was started with Pfannenstiel’s section, while with 3 it was median laparotomy. Conservative myomectomy was done through cross section of miometrium with electrocautery in the projection of greater convexity of the tumor. At that, incised was not only miometrium, but also superficial part of the tumor, which was seized with bullet pincers for external tractions. Carefully, acutely and bluntly, it was done intracapsular enucleation of myomatous nodes, using bipolar coagulation hemostasis. The formed niche was tried to suture in one layer, only using the interrupted co-opting stitches by Peterburgsky and also with our own method, depending on the depth of the niche and of the character of appearing in some cases “excesses” of
myometrial tissue. Resection of those “excesses” was never done. It was used a continuously resolving suture material (vicryl, dixon) onatraumatic needles. Intraoperative protection of gestation was done with spasmyotics (Baralgin, No Shpa), intravenous infusion of 25.0%-20.0% of sulphuric magnesia, against the background of basic therapy with tocolytics (Ginipral). At the initial stages of operation, all the patients were infused 1.0 g of Ceftriaxon, which was also prescribed for post-operative period. In 1 case out of 28 it was done intraoperative plasma transfusion; hemotransfusion was needed in none of cases. The level of intraoperative blood loss depended on the mass of the removed nodes and on the depth of their lying; it ranged from 150.0 to 340.0±25.0 ml.

There have been no failures about CM that might have required hysterectomy, urgent termination of pregnancy; there has been no uncontrolled intraoperative bleeding.

Discussion

There are few publications dealing with CM with the pregnant. The main body of the published materials is dedicated to out-of-pregnancy myomectomy. This kind of operative intervention has gone through a complex evolution from categorical bans to revival in nowadays (Kulakov and Shmakov, 2001).

Not long ago, in the researches done regarding myomectomy of the deeply located myomatous nodes during pregnancy (Buyanova et al., 2003) the authors preferred termination of pregnancy during operation, or previous termination through natural ways with subsequent carrying out of conservative myomectomy, after a while. That was influenced by the opinion most of them adhered to, about the significantly greater risk of early postoperative complications. But even then another point of view was forming, allowing not only preservation of the genitals of the young females, but also of pregnancy itself when carrying out a CM. At the same time, still there is the difference of tactical choices of treating this pathology. That way, some authors go for conservative prolongation of pregnancy, using various schemes of preserving therapy despite of development of evident degenerative changes in big-sized myomatous nodes and practically permanent danger of termination of pregnancy. Others (Krasnopolsky et al., 2002) are more determined in using CM and get better results (89.3% of preserved pregnancies). It should be noted, however, that the range of indications for CM during pregnancy is not large in those works and it is restricted to giant myomas, clinical Figures of impaired functions of adjacent organs, cervix- or intraligamentously located nodes.

In the light of modern obstetrical research, in our opinion, one must not ignore such an important symptom as continuous danger of abortion which often accompanies pregnancy, against the background of myoma. Slow reaction to conservative therapy, persistence in carrying out this therapy over a long period of time against the background of rapidly growing myomatous nodes, development of degenerative changes in them, deformations of the uterine cavity, all that significantly discredit the antenatal fetus, often minimizing the perspective of delivery of a healthy child, and more often all that leads to prematurely termination of pregnancy. In the episodes of planned pregnancy, this category of patients, to our mind, must be given a much closer attention and be considered as one of potential contingents for CM.

As it was demonstrated with our sampling clinical material, the danger of abortion was the main symptom the patients arrived with. The rate of development of this syndrome among the pregnant with hysteromyoma varies significantly from 30% to 75% (Kulakov and Shmakov, 2001). Probably, the rate and degree of manifestation of the danger of abortion is influenced by localization, size and number of myomatous nodes in the pregnant womb. In our research, with a significant number of the pregnant (50%) the danger of abortion was developing at early terms of gestation. Most apparently it was seen with big-sized (6-18 cm in diameter) myomatous nodes with deep localization.
Earlier it was shown the interrelation between localization of the mole inside of the womb (with respect to a big-sized myomatous node) and further course of pregnancy. The most unfavorable effect onto the pregnancy outcome is exercised by the mole’s position below the myomatous node (Botvin and Pobedinsky, 2004). According to our results, such an interrelation between tumor’s localization and the course of danger of abortion failed to be established.

As it was noted in the results of our research, among the 4 patients whose pregnancy was interrupted in 12-22 days after operation, the symptoms of danger of abortion disappeared gradually in postoperative period and there were no visible complications, there was no bloody discharge, and the ultrasound scanning showed neither signs of detachment of placenta nor apparent danger of abortion. Nevertheless, the pregnancy aborted at the above mentioned terms. According to our observations, the unfavorable outcome of pregnancy was influenced with: the depth of lying, the number and size of myomatous nodes, also the rapid growth of tumor accompanied with trophopathy (see Tables 1, 2). It should be also noted that carrying out of operation, under described conditions, at early terms of gestation (up to 10 weeks), possibly has had a negative effect on the pregnancy outcome. Most researchers recommend that CM be done nearer to 16 weeks, as at this term the placenta is already formed and the level of progesterone increases significantly. In an urgent situation, however, (trophopathy of myoma) it has been not always that we managed to prolong the pregnancy up to the optimal term.

For quite clear reasons, myomectomy during a pregnancy is different from that with the nonpregnant. This makes for the necessity of observing of the following conditions when carrying out an operation: 1) minimal manipulative and surgical traumatizing of the pregnant womb, also the use of blood-preserving technique; 2) the choice of rational incision on the womb; 3) the choice of suture material possessing durability, minimal allergenicity, capacity of forming a good scar. To our mind, the cross section on the womb is as actual as it is when operating the nonpregnant - at that process it is noted less blood loss. We have used classical intrafascial myomectomy. The method of closure of myomatous node in one layer through applying of interrupted co-opting suture with the use of continuously resolving suture material has proved the development of a full-fledged postoperative scar, which could be seen during subsequent Cesarean section.

In a number of cases, however, when removing the myomatous nodes, it could be possible the forming of “excessive” flaps of miometrium in external part of the womb. By no means should those be resected. This argument appeared in the light of recent fundamental research of miometrium morphology (Savitsky and Savitsky, 2000) where it was established minimal proliferation of myocytes during pregnancy, while the growth of the pregnant womb goes mainly as a result of hypertrophy of cells of miometrium. So, resection of the appearing excesses of miometrium may reduce significantly its general mass which would affect negatively on the further course of pregnancy. This phenomenon was also noted in earlier research, where after resection of “excessive miometrium” at farther terms of pregnancy the womb significantly decreased in size and began to resemble an infantile organ (Botvin and Sidorova, 1991). At the same time, under such conditions, the immersion way of restoring of the niche may cause a considerable deformation of the cavity of uterus and may cause an increase of pressure in the area of amnion, also disruption of fetal membrane, detachment of placenta. This is why we offered and realized in our practice the way of restoration of the niche through overlapping. At that, one part of the excessive flap goes into the cavity of the niche while the other goes over it. Both flaps are sutured to adjacent tissues independently for better fixation, hemostasis and reparation. Comprehensions related to the fact that one part of the flap goes on the perimetrump of counter lateral flap turned out to be wrong, as the further course of pregnancy and the subsequent Cesarean section proved a quite normal retraction of the myometrium sheets and the organ’s reparation, without any significant deformation of the wall of womb.

Thus, the practice of work with the pregnant against the background of hysteromyoma has shown that there is a group of females among which a conservative treatment for
prolongation of the planned pregnancy turns out to be of little effect. The carried out research has demonstrated that CM under such conditions enables effective preservation of pregnancy in most of cases.

At the same time, despite of traumatic character of the operation, there were no heavy uncontrolled complications that might have required urgent interruption of pregnancy or hysterectomy. This fact is of great importance, as otherwise CM during pregnancy would have no rational sense.

We have experience of carrying out CM during Cesarean section (CS), however, it seems to us that this aspect of the problem had better be considered in a separate section; this is why we have not included that material in this paper, and concentrated the attention on the question of preservation of a desired pregnancy against the background of HM. It is also caused with the fact that CM during CS is only done after extraction of the infant and afterbirth from uterus and this actually is the beginning of the postnatal period. This is why we believe that CM during CS is not correctly considered by some researchers in the section “CM during pregnancy”. It would be more appropriate to refer to this kind of operation as to CM in the early postnatal period.

The method of ligation of the uterine arteries before CM during CS, described in the works referred to above, seems to us to be most promising in terms of blood preservation. We also use this method without any visible negative consequences. At the same time, one may hardly agree with the authors (Suwandinata et al., 2008) who suggest using the modified surgical technique including the interrupted suturing around the myoma, for hemostasis, as the first stage. To our mind, that is unjustified and leads to unnecessary traumatizing.

Laparoscopic CM, successfully carried out by Fanfani et al. (2010) with a patient at the 25th week of pregnancy (removed was a big subserous myoma), in our mind, is also prematurely treated as an alternative to the traditional access, because of serious risks; this is even more related to females with a desired pregnancy.

When carrying out CS after CM in none of cases have we noted any signs of inefficiency of the scar in the area of the removed nodes. Despite this fact, the possibility of spontaneous delivery, based on the single observations (Dracea and Codreanu, 2006), in our judgment, needs a further investigation, and here we must point again to the importance of such a factor as the desired pregnancy that might turn out to be last with this contingent of women.

Summary and conclusion

Carrying out of CM among the pregnant must be based on strict indications: the incurable threat of abortion, the rapid growth of the tumor, disturbing the function of the adjacent organs, the trophopathy of the tumor. The desired pregnancy, caused with various reasons, is not the last of the factors. This kind of intervention should be considered as the last reserve for maintenance of pregnancy, as in most cases the pregnancy is borne to the full term, as opposing to conservative treatment. The ischemia or necrosis of the myomatous node, incurable by medicinal correction, must not be considered as indication for abortion or contraindication for CM in pregnancy. The contraindications for this kind of intervention against the background of pregnancy are: submucous HM in its pure form, localization of the placenta in the area of the submucous node, detachment of placenta with any localization of the nodes, severe extragenital pathology.

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