

# Myomas and pregnancy: a case report and review of the literature

## Abstract

Myoma is the most common benign pelvic tumor in women, with a prevalence in the general population of between 20 and 50% of women of reproductive age.<sup>1</sup> During pregnancy, the frequency of myomas is estimated to be between 3 and 13%.<sup>1</sup> Their discovery in this context is all the more frequent as the age of patients at the time of their first pregnancy increases and the average number of ultrasounds performed during pregnancy has increased over the last 20 years. Fibroids are a source of obstetrical complications in pregnant women in 10 to 40% of cases: they can have consequences on fertility or complicate the evolution of the pregnancy, delivery and post-partum. We report the case of a large uterine myoma discovered during pregnancy in a primiparous woman.<sup>2</sup>

**Keywords:** myoma, pregnancy, necrobiosis, restricted growth, delivery, myomectomy, hysterectomy

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## Introduction

Uterine fibroid is the most common benign tumor in women of childbearing age. The probability of the association of fibroids with pregnancy is therefore high. This probability is constantly increasing, linked on the one hand to the later onset of pregnancies, knowing that the incidence of myomas progressively rises with age, and on the other hand to the emergence of ultrasound that reveal during systematic ultrasound scans of pregnancy, fibroids that were previously asymptomatic. In most cases, there is mutual tolerance. However, fibroids can impact fertility or complicate the course of pregnancy, delivery and the post-partum period.

## Observation

Mrs. F.E., 40 years old, married for 10 months before her admission, with no notable pathological history, primiparous, who came to our center for the management of pain.

Abdominal and pelvic pain of progressive onset and accentuation in a pregnancy of 18 months of age, with no other associated signs, notably no metrorrhagia and no fever. The parturient was not followed and did not benefit from an ultrasound dating, the examination on admission found a conscious patient, hemodynamically and respiratory stable, afebrile, the obstetrical examination found an increased uterine height in relation to the gestational age, supple abdomen, in a parturient out of labor with intact water.

Obstetrical ultrasound showed a progressive mono-fetal pregnancy in cephalic presentation, homogeneous fundal placenta, biometrics at 18-19 AUG, with the presence of a voluminous solidocystic image probably continuing with the uterine fundus measuring 14\*13 cm, evoking either a myoma in cystic degeneration or an abdominopelvic mass, The exploration was thus completed by an abdominopelvic MRI which revealed a voluminous mass at the uterine level, fundial under serous of heterogeneous signal delimiting liquid zones within it in hypo signal T1 hypersignal T2, and a portion in connection with hemorrhagic remodeling, this lesion pushes up the transverse colon and compresses the anterior abdominal wall, it measures 14\*13\*11cm, aspect suggestive of a voluminous fundal myoma in aseptic necrobiosis, in addition, the ovaries are of normal size, no effusion (Figures 1-4).



Figure 1 Axial section in hypo T1.

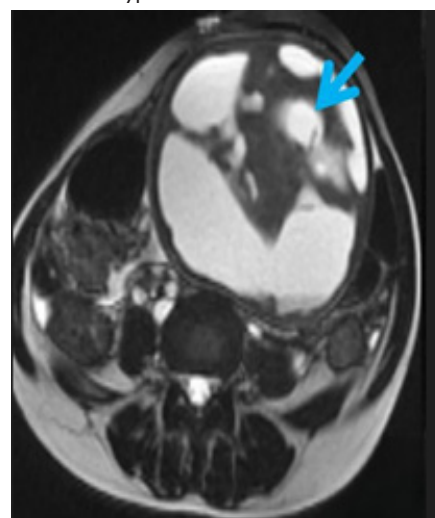
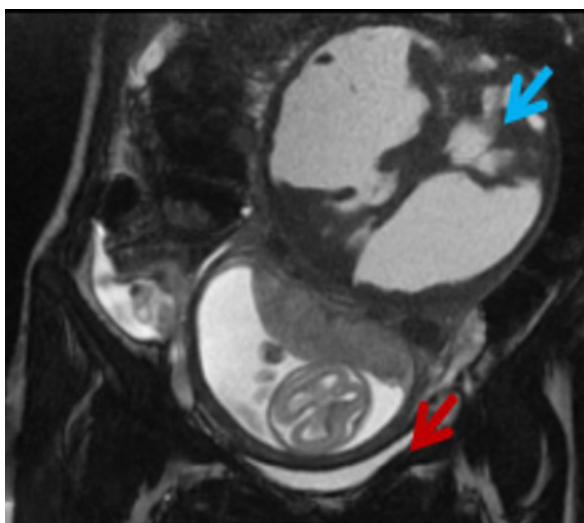
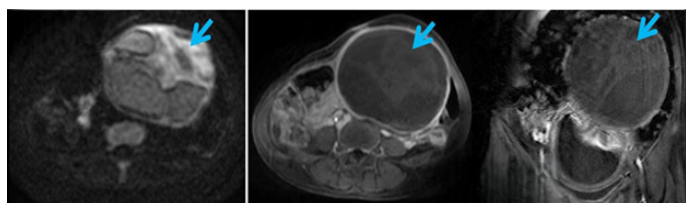


Figure 2 Axial section hyper T1.



**Figure 3** Coronal section of the fetus and the T1.



**Figure 4** Axial diffusion and coronal injected sequence.

Our conduct was to continue the clinical, ultrasound and biological monitoring of the pregnancy in our center, which was regular in order to watch for other complications of fibroids during pregnancy, including

Intrauterine growth retardation, especially given the fundal location of the myoma, which can reduce the natural flow and restrict growth. The patient presented pelvic pain managed by analgesics, the fetal growth was normal with eutrophic biometrics, concerning the delivery route, the vaginal route was accepted as the myoma was not praevia, with spontaneous entry into labor at the term of 37SA, the evolution of the labor was harmonious with delivery by vaginal route of a female newborn weighing 3000g, with good adaptation to the extrauterine life. The immediate and late post partum follow up was simple, notably no hemorrhagic, infectious or thromboembolic complications. Moreover, the surgical management of the myoma is scheduled in our center.

## Discussion

Fibroids are the most frequent benign tumor in women. Its prevalence, still rather uncertain, depends on several factors, the advanced age of the patient, ethnic variations, nulliparity, family predisposition as well as overweight because there is a positively significant association between obesity and fibroid growth, probably through hyper estrogenism. In addition, there are also protective factors with respect to the development of fibroids: multiparity, oral contraception, low weight, late age of the first menstrual period and smoking because it acts as an anti-estrogen.<sup>3</sup>

The presence of one or more myomas during pregnancy and delivery is an obstetrical situation that obstetricians are and will be confronted with more and more because of the increase in the age of parturients on the one hand and better ultrasound screening on the other. Obstetrical complications related to the presence of myomas

are known and not very frequent. There is a consensus that there is no indication for myomectomy during pregnancy except in exceptional cases.<sup>4</sup>

The relationship between fibroids and pregnancy is threefold, but in most cases, the association of fibroids and pregnancy does not lead to complications for either of them:<sup>2,5</sup>

1. Fibroids can prevent conception and implantation and be a factor of infertility, according to Poncelet et al,<sup>6</sup> the mechanisms that explain infertility in case of myomas are an obstruction of the tubal orifices, a significant modification of the uterine cavity forcing a longer path to the spermatozoa, a modification of the endometrial vascularization or even an endometrial erosion. Myomas as the only cause of infertility are found in only 1 to 2% of patients.
2. Fibroids can complicate the course of pregnancy, childbirth and the postpartum period.
3. Pregnancy can facilitate the evolution of fibroids towards complications.

## Influence of pregnancy on the evolution of fibroids

**Evolution of the size of the fibroids:** Monitoring of the evolution of fibroid size is provided by ultrasound. Lopes et al<sup>2</sup> showed that 42.9% of the fibroids monitored between the first and third trimesters had regressed and 53.9% of the fibroids observed between the second and third trimesters had not varied in size. According to Hammond et al,<sup>7</sup> 55.1% of fibroids had decreased between the first and second trimesters of pregnancy and 75.1% had also decreased in size between the second and third trimesters.

**Aseptic necrobiosis:** The observed percentage of aseptic necrobiosis during pregnancy varies from 1.5% in Strobelt to 28% in DiLucca.<sup>3</sup> In two thirds of the cases, these occur in the second trimester, as was the case in our case. The diagnosis is purely histological in myomectomies, but ultrasound can contribute to the diagnosis by looking for changes in the echo structure. According to Lopes et al,<sup>2</sup> there is no evidence of an adverse effect of pregnancy on the occurrence of necrobiosis. Only the symptoms of necrobiosis need to be treated during pregnancy, and treatment based on rest, analgesics, and ice are usually sufficient to relieve the patient. Simple tocolytics should be prescribed if uterine contractions are present.<sup>3</sup>

**Torsion of a pedunculated sub serosal fibroid:** It is a rare complication, the diagnosis of which is difficult. Di Lucca,<sup>3</sup> in his series of 476 cases did not find any cases.

**Compression disorders:** These complications are also rare. The fibroid can cause compression of the neighbouring organs, in particular the ureter with ureteral dilatation and repercussions on the upstream kidney.

## Influence of fibroids on pregnancy

The involvement of fibroids in various pregnancy complications is very controversial in the literature. Some studies tend to state that fibroids may be responsible for certain pregnancy complications.<sup>6,8,9</sup> While for others, the association of fibroid and pregnancy does not lead in the vast majority of cases to any complication

**Spontaneous miscarriage:** Classically, in cases of fibroids associated with pregnancy, spontaneous abortions are more frequent, and this is related to the remodeling of the endometrium and the structure of the myometrium, the deformations of the uterine cavity result in aberrant

implantation and poor development of the egg. The frequency of spontaneous abortion varies from 4% to 18% depending on the author.<sup>7</sup>

**Intrauterine growth retardation (IUGR):** Rosati<sup>9</sup> reports in his study that IUGR is found in cases of large fibroids due to detour of blood flow; it is 3.5% in the series by Lopes<sup>2</sup> and 3.75% in the series by DiLucca.<sup>10</sup> In the study by Delabarre et al.,<sup>3</sup> of the ten cases of intra uterine growth retardation, five could be linked to the presence of fibroids, thus leading to the assumption that a large myoma, especially a submucosal one, is present, or polymyomatous uterus caused detour of blood flow to the placenta for nourishment. Monitoring of our case did not reveal IUGR with satisfactory growth.

**Placental abnormalities:** The fibroid favors the vicious insertion of the placenta, which may insert itself more frequently on the lower part of the uterus or opposite the fibroid. These abnormalities, diagnosed by ultrasound, can cause hemorrhage in the second or third trimester.

**Threatened preterm birth (TPB) and preterm delivery:** The percentage of threatened preterm delivery varies from 17.02 to 24.6% depending on the series.<sup>2</sup> As for preterm deliveries, their rate varies from 8.5% to 17%.<sup>2</sup> In the study by Delabarre et al.,<sup>3</sup> PAD was found in 20.3%. However, only 7.6% can be linked to the existence of fibroids, and it is polymyomatous uteri with large myomas that are most responsible for PAD, or the presence of large subserous myomas of more than 10 cm, or a myoma in aseptic necrobiosis.

**Dystopic presentations:** Presentation abnormalities are more frequent. In the series by Lopes et al.,<sup>2</sup> apex presentation represents 81.2% against 92.7% in the control population. Moreover, according to this series, the incidence of breech presentation increases from 4% for a healthy uterus to 11% for a fibroid uterus.

The study by Delabarre et al.,<sup>3</sup> found 76.7% of cephalic presentations, 20.5% of podalic presentations and 2.7% of transverse presentations. 59% of these dystocia presentations can be linked to the presence of fibroids: due to polymyomatous uteri or voluminous myomas of more than 10 cm pushing the fetus back towards the uterine fundus, or to the presence of large isthmic or even previa myomas. These results seem to be in agreement and even higher than those found in the literature, showing an increased risk of dystocia presentations in the presence of fibroids, which can be explained by a lack of accommodation of the presentation and amplification of the lower segment, hindered by cervical, isthmic or even voluminous fibroids deforming the uterine cavity.

**Route of delivery:** Natural delivery is still possible if the fibroid is not a previa obstacle. Thus, most deliveries are successfully achieved by vaginal delivery with appropriate monitoring. In contrast, several studies by Coronado et al.,<sup>8</sup> Benson et al.,<sup>12</sup> Delabarre et al.,<sup>3</sup> and Qidway et al.<sup>12</sup> converge on the fact that the rate of caesarean section was significantly higher in the population with a myoma during pregnancy than in the control population. This increased caesarean rate is explained by an increase in mechanical and dynamic dystocia, scarred uterus due to the presence of previous myomectomies and the presence of large isthmic fibroids preventing the vaginal route, described as rare in the literature but nevertheless found on seven occasions in our study.<sup>3</sup>

**Myomectomy during cesarean section:** Given the risks of hemorrhage and the fragility of the uterine scar, it is accepted to perform only myomectomies of necessity, when the fibroid sits on the lower segment or if, in a subserous position, it causes a risk of torsion.<sup>6</sup>

Prophylactic myomectomy may be of interest in asymptomatic patients to preserve their fertility, to prevent the possible obstetrical risk during a future pregnancy, and finally to avoid any potential complications related to the myoma (placenta previa, dystocic presentation, pain). To date, there is no data to recommend myomectomy for any of these indications.<sup>13</sup>

In fact, as far as fertility preservation is concerned, the current state of knowledge does not allow us to recommend preventive myomectomy in the case of asymptomatic intramural or subserous myomas, especially if a pregnancy occurred in the presence of this myoma.<sup>13</sup> Only hysteroscopic myomectomy, with limited morbidity, at a distance from the caesarean section may be justified in the case of submucosal myoma (type 0,1,2) even if a pregnancy has occurred in the presence of this myoma, since submucosal myomas may subsequently have an impact on fertility.<sup>1</sup>

**Delivery:** In the study by Lopes et al.,<sup>6</sup> delivery hemorrhage affected 7.3% of the population of women with a myomatous uterus compared with 1.8% of the control population. According to the study by Delabarre et al.,<sup>3</sup> 23.3% of patients with a fibroid during pregnancy had a delivery hemorrhage. The increased risk of delivery haemorrhage in a myomatous uterus can be explained by the difficulties of uterine retraction and involution linked to the presence of a fibroid. In view of these results, patients should always be warned of the risks of haemostasis hysterectomy.

## Conclusion

The association of fibroids and pregnancy is not uncommon, and the mutual risks of this association are generally low, which helps to reassure patients. Of course, prudence requires regular clinical follow-up, monitoring based essentially on ultrasound and management by a team that can deal with the various complications.

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## Conflicts of Interest

The author declares that there are no conflicts of interest.

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