

Elective uterine myomectomy in pregnant women

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Summary: One hundred and six pregnant women with uterine myomas were admitted to a clinical protocol for operative or conservative management of myomas. The criteria for decision to submit to surgery were: (i) recurrent pain; (ii) large or rapidly growing myomas; (iii) large or medium myomas located in the lower uterine segment or deforming the placental site. According to these criteria 18 patients underwent myomectomy (operative group) and 88 were conservatively treated (conservative group). Complications and fetoneonatal outcome were monitored. The data were also compared to a control group of 2463 normal pregnant women. No spontaneous abortion occurred in the operated group, while the conservative group had a 13.6% spontaneous abortion rate (control group: 9.3%). The operated group had the highest cesarean section rate (93.7%), but no post-cesarean hysterectomy. The conservative group had a higher cesarean section rate compared with the pregnant women without myomas (34% vs 16.3%, respectively); they also had a 4.5% post-cesarean hysterectomy rate compared with 0.12% in the control group. Fetoneonatal outcome was good both in the conservative and operated group. The only perinatal death regarded a patient with a large myoma who refused surgery and went into premature labour at 32 weeks of gestation. Therefore, our study demonstrates that myomectomy during pregnancy is of advantage when performed early on selected patients.

Key words: Pregnancy; Uterine myomas.

INTRODUCTION

Uterine myomas are found in approximately 0.3 to 2.6% of pregnant women (1). The vast majority of these myomas is small, asymptomatic and often just a chance finding even since the use of

ultrasonography has become widespread. Myomas do not necessarily jeopardise pregnancy. However, approximately 10-40% of these pregnancies will have myoma-related complications (2-5). These complications appear most often to be related to the size and site of the myoma, in particular with regard to placental site (3). Myoma-related complications are spontaneous abortion (6), premature rupture of membranes, preterm labour, fetal malpresentation (3), postpartum hemorrhage (1), cesarean delivery and post-cesarean hysterectomy (3).

The standard rule for myomas in pregnancy is conservative management. Generally, surgery is undertaken only when

Received January 29, 1996 from the
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and Advanced Therapies Gynecologic and
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Revised manuscript accepted for publication
March 3, 1996.

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Table 1. — *Patients profile.*

	Pregnant group with myomas (n = 106)		Healthy pregnant group (n = 2463)
	Operated (n = 18)	Not operated (n = 88)	
Age (yrs)	33 (28-40)	35 (29-40)	29 (26-40)
Nulliparous	16 (83.3%)	40 (45.4%)	1639 (66.5%)
Multiparous	2 (16.7%)	48 (54.6%)	824 (33.5%)
Gestational age at diagnosis (wks) . .	11 (8-17)	13 (6-22)	—
Gestational age at myomectomy (wks) .	12 (10-19)	—	—

Values relative to age are median and range.

complications occur acutely (^{7,8}). In principle, surgical treatment of myomas performed as prevention before onset of acute complications, may be useful. However, there are few retrospective studies in the literature reporting the use of surgery to prevent complications of myoma in pregnancy (⁹⁻¹¹). More data are therefore warranted. In this study we present the outcome of the protocol adopted in our clinic for the preventive management of pregnancies complicated by myoma.

MATERIALS AND METHODS

One hundred and six pregnant women with clinical and ultrasound diagnosed uterine myomas were admitted to the Department of Obstetrics and Gynecology, Ferrara University Hospital, between 1983 and 1994. All patients underwent a preventive protocol to determine the type of treatment (conservative or surgical). The criteria for undergoing to surgery were: (i) recurrent pain; (ii) large or rapidly growing myomas; (iii) large or medium myomas located in the lower uterine segment or deforming the placental site. The fibroids were classified, according to Muram (¹), by their diameter: small (less than 5 cm), medium (between 5 and 10 cm) and large (more than 10 cm). When more than one myoma was present only the size of the largest one was considered. Time of diagnosis was determined and recorded in weeks of gestation when the myoma was first detected. Fibroids that doubled in size between the 11th and the 19th week of pregnancy were

defined as rapidly growing. According to this protocol 18 patients underwent myomectomy (operative group) and 88 were conservatively treated (conservative group).

Operative and conservative groups were prospectively monitored for pregnancy outcome variables (spontaneous abortion, premature rupture of membranes, preterm labour, intrauterine growth retardation, cesarean section, post-cesarean hysterectomy). The prevalence of outcome variables was retrospectively compared with that of the control group consisting of 2463 normal pregnant women, randomly selected from those routinely admitted to our department during the same period of recruitment of the patients with myomas.

RESULTS

Table 1 illustrates the profile of the groups considered for the study. Table 2 shows size and site of the fibroids in the operated and non-operated groups. In

Table 2. — *Size and site myomas.*

	Operated (n = 18)		Not operated (n = 88)	
	Corpus	Isthmus	Corpus	Isthmus
Small (< 5 cm)	0	0	38	7
Medium (5-10 cm)	6	3	38	4
Large (> 10 cm)	7	2	0	1*

* Patient refused intervention.

Table 3. — *Comparison of complications during pregnancy among women with myomas electively operated or not operated, healthy pregnant women internal control.*

	Healthy pregnancies (n = 2463)	Pregnancies with uterine myomas	
		Operated (n = 18)	Not operated (n = 88)
Abortion	228 (9.3%)	0	12 (13.6%)
Premature membranes rupture . .	134 (5.4%)	1 (5.6%)	20 (22.7%)
Intrauterine growth retardation .	61 (2.5%)	1 (5.6%)	4 (4.5%)
Preterm labour	141 (5.7%)	1 (5.6%)	19 (21.6%)
Post-cesarean hysterectomy . . .	3 (0.12%)	0	4 (4.5%)

the operated group there were seven large and four medium-size fibroids located in the uterine corpus. In this group all the medium size myomas were rapidly growing. In the conservative group, however, there was one large unoperated myoma, because the patient refused surgery. Moreover, in this group we found 38 medium and 38 small-size myomas. Surgery was performed in the majority of cases between the 11th and the 13th week of gestation. However, four women were later referred and myomectomy was performed at the 14th, 15th, 17th and 19th week of pregnancy.

Pregnancy outcomes in the conservative and operative groups compared with the control group are reported in Table 3. No spontaneous abortion occurred in the operated group while the conservative group had a 13.6% spontaneous abortion

rate. The conservative group had the highest premature membrane ruptures and preterm labour rates (22.7% and 21.6%, respectively). However, the operated group had no post-cesarean hysterectomy, while the conservative group had a 4.5% post-cesarean hysterectomy rate compared with 0.12% in the control group.

The outcome of the newborns is reported in Table 4. There was only one perinatal death. A patient who had a large fibroma obstructing the lower uterine segment refused surgery and went into premature labour at 32th week of gestation. An emergency cesarean section was performed together with a post-cesarean hysterectomy for post-partum haemorrhage. The baby was 1380 gr in weight and died of enterocolitis necrotizing 40 days after birth.

Table 4. — *Neonatal outcome.*

	Healthy pregnancies (n = 2463)	Pregnancies with uterine myomas	
		Operated (n = 18)	Not operated (n = 88)
Apgar:			
> 7	2447 (99.3%)	18 (100%)	87 (98.9%)
≤ 7	16 (0.7%)	0	1 (1.1%)
Weight:			
> 2,500 g	2283 (92.7%)	17 (94.4%)	80 (90.9%)
≤ 2,500 g	180 (7.3%)	1 (5.6%) *	8 (9.1%)

* 2,370 g at the 38th week of pregnancy.

DISCUSSION

Complications occur in 10-40% of pregnancies in women with myoma (^{3, 5, 12}). This number may not be impressive, but, complications may significantly influence the outcome of these pregnancies. So far, the suggested management of myomas in pregnancy has been conservative. Surgery is used only when acute complications arise since there is a generalised fear of abortion or premature labour brought about by the surgery itself.

The reported incidence of spontaneous abortion after myomectomy in pregnancy greatly varies in the literature (from 7.7% to 27%). However, the lowest incidence of abortion is reported after myomectomies performed electively (^{9, 11}), while the highest incidence occurs after emergency operations for acute complications (¹⁵).

Our protocol has shown that elective surgery does not increase the incidence of spontaneous abortion in pregnancy with myomas. Moreover, elective surgery improves fetal and neonatal outcome. The only neonatal death we had occurred in a patient with a large myoma who refused surgery. In our data, the pregnancy outcome of patients with myomas treated with elective surgery was similar to that of pregnant women without myomas.

The reported incidence of complications occurring after conservative treatment of myomas in pregnancy greatly varies in the literature (from 2.9% to 38.4%) (^{1, 2, 7, 8, 13-15}). Lack of consideration of the size, site and number of the myomas may account for this large variability. However, when these parameters are taken into account, such as in the study by Rice and Rosati (^{3, 16}), the incidence of spontaneous abortion, premature labour, intrauterine death, and placental abortion, is proportionally higher in those pregnancies with large or multiple myomas. Our data regarding elec-

tive conservative management of myomas in pregnancy have shown better results compared with those regarding untreated patients, as reported in the literature (⁸). Our untreated patients, however, had a worse outcome compared with patients surgically treated or pregnant women without myomas (internal control). The incidence of premature labour, premature rupture of the membrane and preterm labour, in particular, appeared higher in women whose myomas were conservatively treated compared with the other two groups. These data demonstrate that myomas, however, negatively influence pregnancy.

In conclusion, our study demonstrates that elective myomectomy during pregnancy is a safe operation when done early on selected patients. Patients with a myoma that may compromise the outcome of pregnancy should be operated-on, while all the others should be treated conservatively. Our protocol has given us good results in pregnancy, labour, and in fetal-neonatal outcome.

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