Successful laparotomy myomectomy during 2nd trimester of pregnancy: ACase report

Abstract:

Antepartum surgical procedure of myomectomy is rarely performed except in individualized cases as it carries high risk of intractable haemorrhage which might necessitatehysterectomy.Mostof cases are performed at the time of caesarean section or with a laparoscopic approach after pregnancy. We report a case of successful laparotomy myomectomy in 26 years old primigravida at 19 weeks of gestation who presented with acute abdominal pain, pelvic pressure symptoms and difficulty in breathing due to huge abdominal mass. Imaging revealed a large multiple sub- serous and intramural myomas extended toxiphoid sternum compressing the diaphragm and causing breathing embracement.Laparotomy myomectomywas performedsuccessfully.The subsequent antenatal ultrasound showed short cervix of 0.5 cm,patient was offered cervical cerclage but she refused, so she was on conservative medical management with local and systematic progesterone support. Follow up was uneventful and she delivered vaginally at 37 weeks of gestation with no complications. This report supports the safety of myomectomy during pregnancy in selected scenarios.

Keywords: Pregnancy, leiomyoma,Myomectomy,live birth, 2ndtrimester, miscarriage

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Introduction:

The estimated prevalence of uterine myomas during pregnancy varies from 0.3 to 15%. [1] Uterine fibroids usually asymptomatic during pregnancy, but some time may be complicated by painful red degeneration, increased risk of spontaneous abortion, preterm labour, premature rupture of foetal membranes, antepartum haemorrhage, malpresentations, obstructed difficult labour, operative delivery such as caesarean section and postpartum haemorrhage.[2]In pregnancy about 10% of cases of uterine fibroids can lead to obstetrical complications depending on their size, location, and number [2, 3,4]. The most common symptoms of uterine myomas are abdominal painwhich is usually manged conservatively by analgesia; however, conservative medical management fails in 2% of patients. [1]

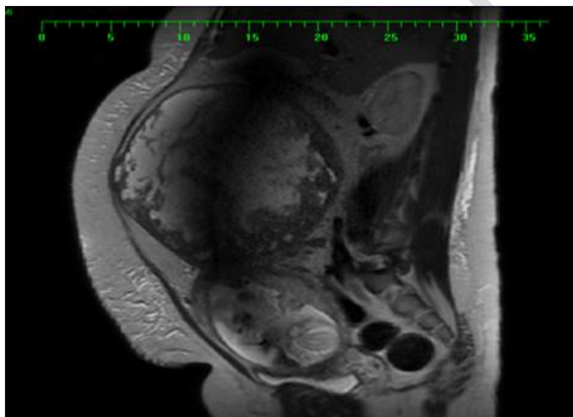
Expectant management of uterine fibroids during pregnancy is usually preferable approach and surgical intervention is generally postponed until after delivery in most cases .[2] Due to high risk of excessive haemorrhage and obstetrical complications,myomectomy is generally avoided during pregnancy.Surgicalintervention isusually reserved for patientshaving

intractable abdominal pain not responding to available analgesia, or symptoms associated with]degenerationand rapid growth of myoma. [1]

Only a few cases of antepartum myomectomy have been reported in the literature.[1] SpyropoulouK [6]conducted a systemic review of pregnant patients with uterine myomas. He found that the median gestational age at diagnosis was 13 weeks, while the median age at myomectomy was 16 weeks. Most of cases were sub serous pedunculated or sub serous and fundal. Laparotomy was the main surgical intervention in(78.4 %) of cases;although laparoscopic and vaginal operations were also reported. The median duration of surgery was 53 min. Necrosis and degeneration were the main findings of removed fibroids identified during histopathogy examination. The pregnancy was successful in most of the cases, with few complications reported.[6]

Case presentation:

26 years old female primigravida at 19 weeks of pregnancy, admitted in Obstetrics and Gynaecology department in Royal Hospital in 2021with history of intractable pelvic pain, abdominal discomfort, lower back pain and difficulty in breathing. The medical and surgical history of the patient was uneventful. Obstetrical examination showed a large firm and irregular pelvic mass up to xiphoid sternum, with uterine fundal hight of40weeks. Abdominal ultrasound confirmed a viable fetus corresponding to 19 weeks and multiple subserous large implant myoma (largest 20x18 cm) and Magnetic resonance imaging (MRI) confirmed the diagnosis (Figure 1&2).



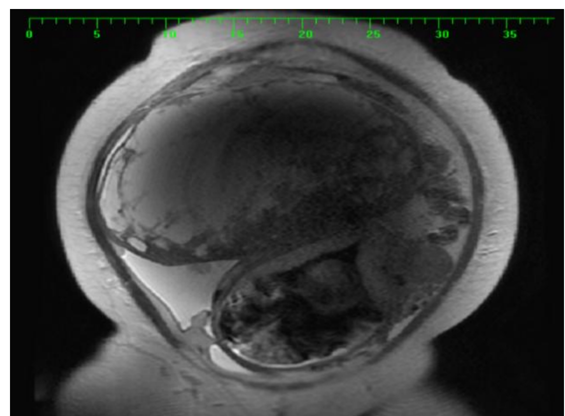


Figure 1& 2: Sagittal T2 weighted MRI of the abdomen and pelvis showing a large well - defined heterogenous subserosal leiomyoma arising from the uterine fundus with predominantly high T2 signals. Gravid uterus with single fetus (partially showed).

Due to the huge mayoms which was causing interactable acute abdominal pain laparotomy myomectomy was planned. Patient was extensivelycounselled about the expected difficulties anticipated with theoperation, risk of bleeding, blood transfusion,injuries to surrounding organs or vessels, risk of hysterectomy in case of un-control haemorrhage as lifesavingprocedure,risk of miscarriage before 24 weeks of pregnancy and preterm labour if pregnancy continue. In view of volume and the location of the myomas and in order to be able to manage possible complications, midline laparotomy incision was chosen. After

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accurate operative field exposure, the huge myoma was removed (Figure 3&4). The operation took almost 2 hours' duration and estimated blood loss was 1500 ml.

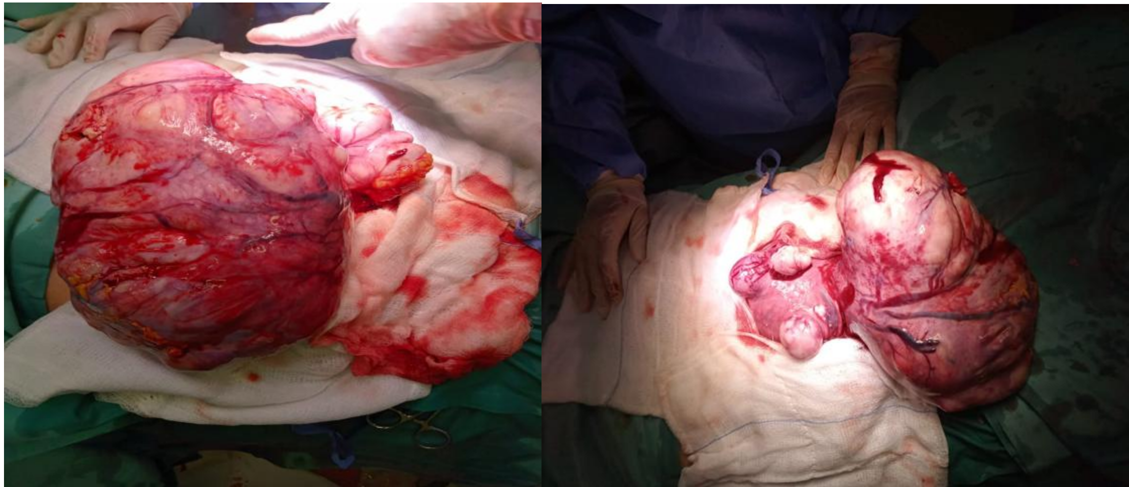

Figure 3&4: multiple sub serosal pedunculated fibroids with cystic changes, both tube and ovaries looks normal

Operative findings:

On laparotomy gravid uterus with hugemultiple sub-serosal pedunculated fibroids, largest arising from right fundal region of size 22x16x15cm with cystic changes and serous fluid. Other one anterior lateral uterine sub-serosal fibroid 7x7 cm. Following leiomyoma removal, haemostasis was carefully achieved. The myomas weighing total of 2 kg was sent for histopathology examination. Patient received 2 units of blood intra-operatively and one unit of blood post operation. She received intravenous antibiotic for 3 days and injectable Hydroxyprogesterone Caproatewas administered intramuscularly post operation to prevent a possible miscarriage. Patient was dischargedpost operation day three in good condition withoral antibiotic (cefuroxime) for 5 days, low molecular heparin for 10 days and was on weekly injection Hydroxyprogesterone Caproate till 34 weeks of gestation.She was seenday10 post operation for clip removal, was asymptomatic andfetal ultrasound showed normal growing fetus.The histopathology report showed leiomyomata with degenerative changes associated with pregnancy. Focal mild cellular atypia and infarct type necrosis seen.

Discussion

To the best of our knowledge the first case of intrapartum laparotomy myomectomy was from LatinAmerica in2000, 2nd from Nigeria in 2003 andthen other cases reported subsequently in years 2010, 2011 ,2013, 2016 (1,2, 3) and last cases reported in a systemic review published in August 2020 include 97 cases .[6]

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Laparotomic myomectomy is usually avoided during pregnancy due to higher risk of complication and effect on ongoing pregnancy. [1] Most cases are usually performed during a caesarean section at the end of the pregnancy if clinically indicated.Antepartum myomectomy has been performed in selected cases of acute unmanageable abdominal pain that does not respond to analgesic therapy or suspected torsion of the subserous pedunculated myomas or in cases of respiratory depression due to rapid abnormal increase in myoma size. [1] Other advantage of antepartum myomectomy observed is reversal of fetal complications such as oligohydramnios, fetal postural deformity and intrauterine growth restriction.[9]

Pawan Jhalta[3] found in his study that the risks of miscarriage with myomectomy occurs in 18% to 35% of cases.[3]The increased risk of miscarriage was attributed to the increase in uterine contractions, degeneration, and growth of myoma. Lolis [1] studyreported thatsuccess rate of antepartum myomectomy reaching to 92.[1] Around 15-20% of women with myomas had preterm delivery ,10 % had restriction fetal growth and 20% had malpresentation. [1, 8]Mollica [3] studyconcluded that regardless of gestational age, the outcomes for all women who underwent myomectomy was superior to those managed conservatively in terms of pregnancy loss (0% versus 13.6%), premature rupture of membranes (5.6% versus 22.7%), preterm labour (5.6% versus 21.6%) and post-caesarean hysterectomy (0% versus 4.5%).[3][7]

Myomectomy during pregnancy can be performed by laparotomy or laparoscopy technique depending on the volume and location of fibroids. Laparoscopydone in selected cases (small, subserous pedunculated myomas. Advantage of laparoscopy myomectomy it is less invasive, minimal postoperative pain, earlier postoperative ambulation [1].Two cases are reported in the literature with large pedunculated myomas operated by the vaginal route.[1]

This case and other reported cases demonstrates that myomectomy during pregnancy in special circumstances can be consideredto prevent complication affecting mother and fetus.

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Conclusions

Surgical management of uterine myomas during pregnancy can be successfully performed by expert surgeons in selected cases. Antepartum myomectomy should be performed only if unavoidable weighing risk and benefit of the operation on mother and fetus. In selected patients it could prevent miscarriage or an unacceptable obstetrical outcome. The surgical approach should be tailored to the patient and to the characteristics of the myoma. Surgical procedure should be done by expert surgical and anaesthesiologicteam and in tertiary centres in order to reduce risk of complications. Thisreporthighlightsthe safety of myomectomy during pregnancy in selected circumstances.

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