

# Incarceration of gravid uterus by growing subserosal myoma: case report

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## Summary

Incarceration of gravid uterus is a rare condition, occurring in one in 3,000 to 10,000 pregnancies during second trimester. Incarceration of uterus can cause several complications, such as uterine rupture, labor dystocia, and uncontrollable postpartum hemorrhage. Early diagnosis is important to prevent these complications, but there are no standard treatments of incarceration of gravid uterus. The authors present a case report of incarceration of gravid uterus caused by growing subserosal myoma, which was treated with myomectomy during second trimester.

**Key words:** Retroverted gravid uterus; Subserosal myoma; Uterine incarceration.

## Introduction

Approximately 11% of pregnant women have a retroverted uterus [1]. Usually it changes to spontaneously anteverted upward position by 14 weeks of gestation [2]. When retroversion persists beyond the second trimester, the uterine corpus becomes entrapped in the hollow of the sacrum. This complication is called uterine incarceration [3]. The incidence of uterine incarceration during second trimester has been reported in one in 3,000 to 10,000 pregnancies [4, 5]. Predisposing factors of uterine incarceration are pelvic adhesions, endometriosis, uterine malformation, leiomyoma, and pelvic tumors [6]. Therefore if the patient has these factors, the obstetrician has to consider possibility of uterine incarceration. If the obstetrician misses to diagnose this condition, it can lead to some emergencies, such as uterine rupture, labor dystocia, and uncontrollable postpartum hemorrhage [7].

Here the authors present a case of an incarcerated gravid uterus caused by growing subserosal myoma and myomectomy was performed for correction of uterine incarceration at second trimester, and the baby was successfully delivered vaginally at 39 weeks of gestation.

## Case Report

A 29-year-old married woman, gravid 0, had visited the outpatient clinic for gynecologic check-up. By ultrasound, she was diagnosed with a subserosal myoma which was located at anterior part of uterus, seven cm sized (Figure 1), but she did not have any specific symptoms, and the present authors recommended regular follow up. After three months, she returned for antenatal care with intrauterine pregnancy 6<sup>+4</sup> weeks of gestation. By ul-

trasonographic scanning, the authors found the fetus with normal fetal heart beats and the crown-rump length was six weeks of gestation size (0.67 cm) and the uterus was in an anteverted state. However the subserosal myoma had grown to 10.85 cm. The antenatal routine check-up results were all within normal range.

For quad test, she returned to the outpatient clinic at 15<sup>+5</sup> weeks of gestation. The patient complained of constipation and low abdominal discomfort. Ultrasonographic scan revealed that the subserosal myoma was increased to 13.45 cm and the uterine position was changed to retroverted. The authors checked magnetic resonance imaging (MRI) of the pelvis to identify exact position of uterus. It revealed a uterus that was retroverted by a large subserosal myoma with dimensions of 20 x 15 cm (Figure 2). The cervix was extended anteriorly and the body of uterus was seen with an acute retroverted angle. So the authors diagnosed incarcerated retroverted gravid uterus caused by huge subserosal myoma.

They expected natural repositioning of the uterus following increasing uterine size with advancing gestational age at outpatient clinic. However, the symptoms of incarcerated uterus, lower abdominal pain, and constipation worsened, therefore the patient was admitted for manual reduction, but the traction of uterine cervix by grasping forceps failed and then the authors performed myomectomy with general anesthesia. In supine position, low midline incision about ten cm was done. After opening of peritoneum, the authors found a subserosal myoma on the anterior surface of gravid uterus and the myoma was expelled from abdominal cavity manually (Figure 3). The stalk of subserosal myoma was ligated with vicryl 1-0 suture and the subserosal myoma was removed. After removing the subserosal myoma, the uterus was naturally repositioned to anteverted state. Postoperative ultrasound scan showed normal fetal heart rate and no intrauterine or subplacental hematoma. After surgery, the patient's symptoms improved without complications. The pregnancy progressed uneventfully and normal spontaneous vaginal delivery was done at 39 weeks of gestation. The patient gave birth to a

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hours with an empty bladder [10]. If spontaneous reduction is not successful, manual repositioning may then be attempted. Manual manipulation through the posterior fornix should be considered, while the patient is in the dorsal lithotomy position. If this method is unsuccessful, manual manipulation can attempted once more under an anesthetic condition. It has been found that epidural anesthesia is a reasonable approach to the initial anesthetic management for reduction of an incarcerated uterus [10]. Another manual repositioning method is attempted by pulling down the cervix and maintaining rectal pressure on the fundus at the same time. In the present case, the cause of uterine incarceration was due to the mass effect of the subserosal myoma, hence the possibility of manual reduction was thought to be low. The present authors attempted manual traction of uterine cervix only one time.

In the present case, uterus was incarcerated because of rapid growth of the subserosal myoma. The present authors therefore recommend that myoma should be observed more carefully during pregnancy, especially in a rapid growing case. The incarceration of gravid uterus by rapid growing subserosal myoma might be corrected only by myomectomy and the patient had no problem during postoperative and pregnant period and the baby was born successfully by vaginal delivery. The present authors have reported this case with a short review of the articles.

## References

- [1] Love J.N., Howell J.M.: "Urinary retention resulting from incarceration of a retroverted, gravid uterus". *J. Emerg. Med.*, 2000, 19, 351.
- [2] Jackson D., Elliot J.P., Pearson M.: "Asymptomatic uterine retroversion at 36 weeks' gestation". *Obstet. Gynecol.*, 1988, 71, 466.
- [3] Gibbons J.M. Jr., Paley W.B.: "The incarcerated gravid uterus". *Obstet. Gynecol.*, 1969, 33, 842.
- [4] Hess L.W., Nolan T.E., Martin R.W., Martin J.N. Jr., Wiser W.L., Morrison J.C.: "Incarceration of the retroverted gravid uterus: report of four patients managed with uterine reduction". *South. Med. J.*, 1989, 82, 310.
- [5] Weekes A., Atlay R., Brown V., Jordan E., Murray S.: "The retroverted gravid uterus and its effect on the outcome of pregnancy". *Br. Med. J.*, 1976, 1, 622.
- [6] van der Tuuk K., Krenning R.A., Krenning G., Monincx W.M.: "Recurrent incarceration of the retroverted gravid uterus at term - two times transvaginal caesarean section: a case report". *J. Med. Case Rep.*, 2009, 3, 103.
- [7] Wang L., Wang J., Huang L.: "Incarceration of the retroverted uterus in the early second trimester performed by hysterotomy delivery". *Arch. Gynecol. Obstet.*, 2012, 286, 267.
- [8] Vitale S.G., Tropea A., Rossetti D., Carnelli M., Cianci A.: "Management of uterine leiomyomas in pregnancy: review of literature". *Updates Surg.*, 2013, 65, 179.
- [9] Lettieri L., Rodis J.F., McLean D.A., Campbell W.A., Vintzileos A.M.: "Incarceration of the gravid uterus". *Obstet. Gynecol. Surv.*, 1994, 49, 642.
- [10] Algra L.J., Fogel S.T., Norris M.C.: "Anesthesia for reduction of uterine incarceration: report of two cases". *Int. J. Obstet. Anesth.*, 1999, 8, 142.

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