

# Uterine torsion in the second trimester of pregnancy with a large leiomyoma identified in a cesarean section for abruptio placentae: a case report and literature review

A. Komatsu<sup>1,\*</sup>, K. Kawakami<sup>2,\*</sup>, H. Koike<sup>1</sup>, T. Nagamatsu, Y. Osuga<sup>1</sup>, T. Fujii<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Faculty of Medicine, The University of Tokyo, Bunkyo-ku, Tokyo

<sup>2</sup>Department of Obstetrics and Gynecology, Tokyo Metropolitan Ohtsuka Hospital, Toshima-ku, Tokyo (Japan)

## Summary

The authors report a case of uterine torsion in the second trimester pregnancy with a large leiomyoma. A 28-year-old pregnant woman with a leiomyoma approximately 15 cm in size, was diagnosed with preterm premature rupture of membranes (pPROM) and abruptio placentae at 23 weeks and 0 days of gestation. Because the fetal heart rate pattern was extremely variable and decelerated to lower than 70 bpm before a prolonged deceleration to approximately 80 bpm, an emergency cesarean section was performed. Uterine torsion was identified after the uterine incision was sutured. The uterus was rotated 150 degrees clockwise, and the uterine incision had therefore unfortunately been performed in the back wall of the uterus. Because torsion was suspected to result from an increase in uterine size, the existence of a leiomyoma was viewed as the main cause of uterine torsion in this second trimester of pregnancy. This case indicates that it is important to consider the potential risk of uterine torsion when indicated, especially in cases with a risk of having a large leiomyoma.

**Key words:** Abruptio placentae; Uterine torsion; Leiomyoma; Second trimester.

## Introduction

Leiomyoma is one of the most common complications in pregnant women. The major symptoms caused by leiomyoma in a pregnant uterus are localized pain, fever, and nausea. However, unexpected and unpredicted complications can also occur. Here, the authors present a case of a pregnant woman at 23 weeks of gestation who presented with abruptio placentae and torsion of the uterus with a large leiomyoma.

## Case Report

A 28-year-old pregnant with 0 gravida was diagnosed with a leiomyoma approximately 15 cm in size in the right-anterior uterine wall (Figure 1A). She was followed up in the hospital from 7+3 weeks of gestation. The patient visited the emergency room at 23+0 weeks of gestation because of an increase in vaginal discharge. A physical examination revealed obvious preterm premature rupture of membranes (pPROM), abnormal vaginal bleeding, and a bulging water mass approximately 6 cm into the vagina.

Transvaginal and abdominal sonography identified a high echoic 8-cm mass considered a hemorrhage behind the placenta and limited amniotic fluid volume. The fetal heart rate monitoring showed frequent severe and variable deceleration to under 70 bpm. Because the authors diagnosed the patient with abruptio placentae with fetal non-reassuring status, an emergency cesarean section was performed. The operative findings showed a uterus that was obviously enlarged by both the fetus and leiomyoma, making

it difficult to identify the specific anatomical orientation.

After an incision was made in the uterine wall, the male fetus was delivered. After the delivery, the placenta was removed from the uterus, and a hemorrhage of approximately 5 cm was observed in the side of the uterus, indicating evidence of abruptio placentae (Figure 1B). After the uterine incision was sutured, it was determined that uterus was rotated 150 degrees in a clockwise direction (Figure 1C). Therefore, the uterine incision had unfortunately been performed in the backside of the uterine wall. Her postoperative course was good and she was discharged on post-operative day 6. At six months after delivery, the authors performed a myomectomy (Figure 1D).

## Discussion

Uterine torsion is defined as a rotation of more than 45 degrees, and 62% of all affected cases are rotated in a clockwise direction. The frequency of uterine torsion in a pregnancy is 6% in the first trimester, 26% in the second trimester, and 67% in the third trimester [1].

In the present case, the uterine rotation was in a clockwise direction and occurred during the second trimester. Because a torsion event is considered to result from an increased uterine size, the existence of a leiomyoma may have promoted uterine torsion in this case. Although few reports have been published regarding uterine torsion in pregnant women complicated by leiomyoma [2-4], the eti-

\*Contributed equally as co-first authors.

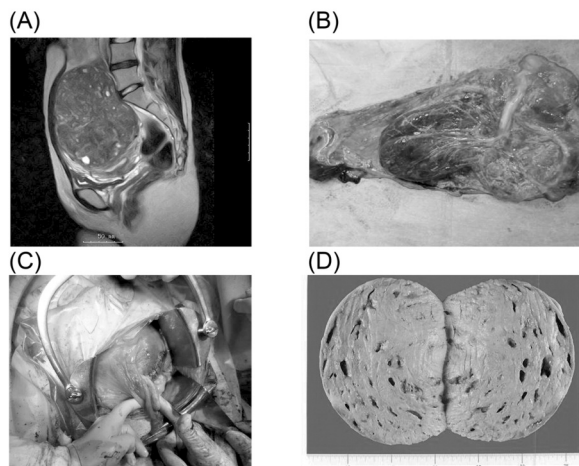


Figure 1. — (A) Preoperative findings of sagittal view of a pre-pregnancy T2-weighted MRI. (B) Removed placenta showing an approximate 5-cm hemorrhage, indicating evidence of abruptio placentae. (C) Hemorrhage at the uterine side of the placenta. Torsion of the uterus is identified after the uterine incision is sutured. (D) A leiomyoma approximately 15 cm in size is removed.

ology of the events in this case can be explained by the leiomyoma.

The uterus might first have been rotated by the leiomyoma, and the internal pressure of the uterus may then have increased. As a result, pPROM and abruptio placentae occurred. Furthermore, another possibility should also be considered. Acute amniotic fluid loss followed by abruptio placentae might cause a rapid shrinkage in uterine volume followed by uterine torsion caused by the imbalanced condition resulting from the presence of a large leiomyoma. It is difficult to retrospectively identify the specific etiology in these cases. Achieving an accurate diagnosis of uterine torsion in an emergency situation is even more difficult.

If the torsion occurred slowly as a chronic event without any symptoms, the time course of the movements that occurred during uterine movements could be traced by the observation of the partial calcification of the placenta on ultrasound or X-ray. In these cases, under careful observation, a term delivery might be possible [5]. However, most affected cases, including the present, are sudden onset and require a cesarean section to rescue both the mother and the fetus. In fact, most cases of uterine torsion are diagnosed by cesarean section [6], fetal mortality of up to 12%, and occasional maternal mortality have been reported in pregnant women [7]. Because the major symptoms of uterine torsion are, in most cases, abdominal pain, nausea, vomit-

ing, abnormal genital bleeding, and shock status [8], focusing on risk factors, such as uterine malformation, adhesion in the pelvis, ovarian cysts, a horizontal position of the fetus, as well as the presence of a leiomyoma, may help to pre-acknowledge and achieve an early diagnosis of uterine torsion.

## Conclusions

Here, the authors report a case of abruptio placentae with uterine torsion in the second trimester of pregnancy with a large leiomyoma. Their experience in this case suggests that it is important to consider the potential risk of uterine torsion in pregnancy when indicated, especially in cases at risk of having a large leiomyoma.

## Acknowledgements

The authors thank Takayuki Iriyama, Toshio Nakayama, Seisuke Sayama, and Rieko Shitara for their clinical support in this case.

## References

- [1] Jensen J.G.: "Uterine torsion in pregnancy". *Acta Obstet. Gynecol. Scand.*, 1992, 71, 260.
- [2] Duplantier N., Begnaud W., Wood R., Dabezies C.: "Torsion of a gravid uterus associated with maternal trauma. A case report". *J. Reprod. Med.*, 2002, 47, 683.
- [3] Deshpande G., Kaul R., Manjuladevi P.: "A case of torsion of gravid uterus caused by leiomyoma". *Case Rep. Obstet. Gynecol.*, 2011, 2011, 206418.
- [4] Sachan R., Patel M.L., Sachan P., Arora A.: "Complete axial torsion of pregnant uterus with leiomyoma". *BMJ Case Rep.*, 2014, 2014, pii: bcr2014205558
- [5] Kremer J.A., Van Dongen P.W.: "Torsion of the pregnant uterus with a change in placental localization on ultrasound; a case report". *Eur. J. Obstet. Gynecol. Reprod. Biol.*, 1989, 31, 273.
- [6] Nesbitt R.E., Corner G.W.: "Torsion of the human pregnant uterus". *Obstet. Gynecol. Surv.*, 1956, 11, 311.
- [7] Fatih F.F., Gowri V., Rao K.: "Uterine torsion in second trimester of pregnancy followed by a successful-term pregnancy". *BMJ Case Rep.*, 2012, 2012, pii: bcr2012006359
- [8] Farhadifar F., Nikkhoo B., Shahgheibi S., Soofizadeh N., Rezaie M.: "Asymptomatic uterine torsion in a pregnant woman". *Indian J. Surg.*, 2014, 76, 321.

Corresponding Author:

A. KOMATSU, M.D.

Department of Obstetrics and Gynecology  
Faculty of Medicine, The University of Tokyo  
7-3-1 Hongo  
Bunkyo-ku, Tokyo 113-8655 (Japan)  
e-mail: atsukoma@yahoo.co.jp