

Cervical myoma causing colonic obstruction in the first trimester of pregnancy – a case report

Erik Agger^{a,*}, Carina Bjartling^b, Tomas Vedin^a

^a Department of Surgery, Skåne University Hospital, Malmö, Lund University, Lund, Sweden

^b Department of Obstetrics and Gynaecology, Skåne University Hospital, Malmö, Lund University, Lund, Sweden

ARTICLE INFO

Keywords:

Case report
Cervical myoma
Colonic obstruction
Pregnancy
First trimester

ABSTRACT

A 39-year-old nulliparous woman with a previously known cervical myoma was admitted to the obstetrics department during the first trimester with complaints of severe abdominal pain, lack of bowel movements and the suspicion of a clinical bowel obstruction. Because no literature on this exact condition could be found, clinical decisions were based on reports and practice in similar situations. Ultrasound revealed the progression of a cervical myoma (previously 9 cm across), now 12 × 12 × 11 cm in size and a distended large bowel. Sigmoidoscopy excluded intraluminal obstruction. The patient was treated with oral laxatives and enema without success and her condition deteriorated. The myomatous cervix was examined vaginally (bimanual manoeuvre) with the patient under anaesthesia; however, attempts to dislodge the obstruction proved unsuccessful. After surgical consultation the patient was planned for an emergency laparoscopic sigmoidostomy. The post-operative course was uneventful and the patient discharged. She delivered a healthy child with caesarean section in gestation week 36. Bowel continuity was later laparoscopically restored in conjunction with a hysterectomy. This case illustrates the importance of active multidisciplinary management in a case of severe colonic obstruction caused by pregnancy-related obstruction in the small pelvis. In this case, colonic perforation and abortion of the fetus were both avoided.

1. Introduction

Intestinal obstruction in pregnancy is an uncommon condition and most often occurs in patients during the second or third trimester [1]. Most patients have a history of previous abdominal surgery [1]. Intestinal obstruction in pregnancy is associated with significant maternal (6%) and fetal mortality (20–26%) [2].

The present patient had no history of abdominal or pelvic surgery. Her obstruction developed during the first trimester and was caused by an impinged large cervical myoma of the uterus causing large bowel obstruction at the level of the promontory – a case history which has apparently not been previously described.

Presentation of bowel obstruction in pregnant patients is similar to that in non-pregnant patients, with abdominal pain, vomiting, history of discontinued bowel movements and distended abdomen [1]. Initial diagnosis may be challenging since imaging with ionising radiation is typically avoided during pregnancy, and while ultrasound, magnetic resonance imaging (MRI) and endoscopy may be preferred they are not always readily available in the emergency setting.

Expedient diagnosis and management of bowel obstruction in pregnancy have been emphasized in the literature as the main predictor of a favourable outcome for both mother and child [1–4].

2. Case Presentation

The patient was in her late thirties and 11 + 3 weeks pregnant when admitted to the gynaecology and obstetrics department with a history of abdominal pain and no bowel movements for ten days. She had been treated for urinary bladder retention with intermittent catheterization from pregnancy week 5.

She was nulliparous, in good health and conception had been spontaneous. She had no history of abdominal or pelvic surgery but had a known myoma in the uterus, discovered three years previously, when she had been admitted for investigation of infertility, and a 9 cm myoma in the posterior wall of the uterus had been found.

On arrival at the ward, her numeric rating scale (NRS) pain score was initially 5/10 but with intermittent tenesmus causing scores of NRS 10/10. She had no fever and had been able to drink fluids over the last

* Corresponding author at: Department of Surgery, Skåne University Hospital, SE-214 28, Malmö, Sweden.

E-mail addresses: erik.agger@med.lu.se (E. Agger), carina.bjartling@skane.se (C. Bjartling), tomas.vedin@skane.se (T. Vedin).

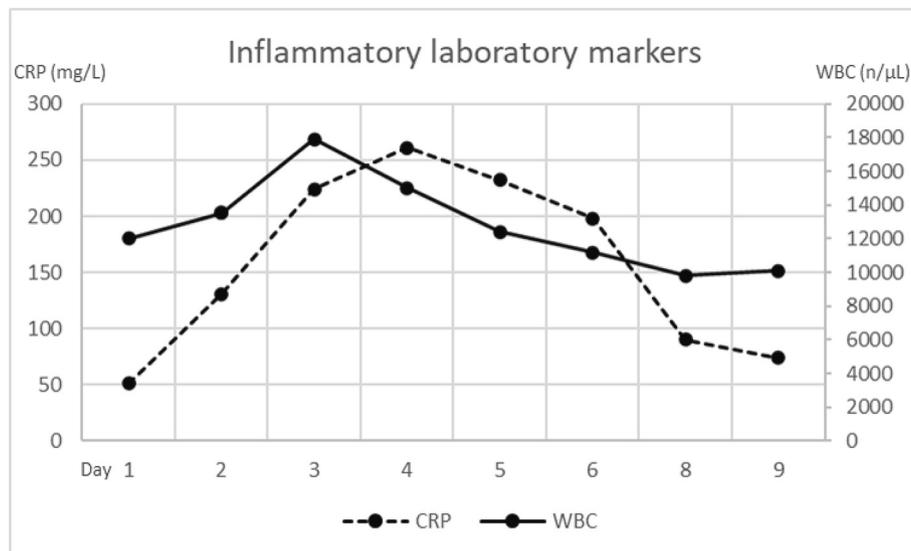


Fig. 1. Inflammatory laboratory markers obtained during hospitalisation. Surgery was performed at day 3 of the hospital stay. Solid line: white blood count(WBC). Dashed line: C-reactive protein (CRP).

Table 1

Inflammatory markers and S-creatinine values during hospitalisation. Surgery was performed at day 3 of hospital stay. White blood count (WBC); C-reactive protein (CRP).

Day	CRP (mg/L)	WBC (n/μL)	S-Creatinine (mmol/L)
1	51	12'000	156
2	131	13'500	158
3	224	17'900	147
4	261	15'000	131
5	232	12'400	110
6	198	11'200	105
7	n/a	n/a	n/a
8	90	9'800	76
9	74	10'100	70

couple of days. There was no history of vomiting, but her abdomen was distended. C-reactive protein (CRP), white blood cell-count (WBC) and serum creatinine (S-Crea) were elevated (Fig. 1 and Table 1). No peritonitis was noted during examination. Pelvic ultrasound confirmed a viable fetus within the uterus and a cervical myoma estimated at 12 × 12 × 11 cm (Fig. 2).

Treatment was initiated with per oral osmotic agents and docusate + sorbitol enema. After a surgical consult, the patient was scheduled for a flexible sigmoidoscopy the same day. No intraluminal pathology was noted. However, a notable narrowing of the bowel stretching for 5 cm, located 15–20 cm proximally from the anal verge was apparent during this examination. Enema was instilled and conservative management with evaluation the next day was planned.

The following morning the patient had increased pain, corresponding to NRS 7–9/10, slight progression of distension and still no bowel movements. Repeat ultrasound showed a viable fetus and no changes to the impinged cervical myoma. CRP and WBC continued to increase, and the patient was started on intravenous antibiotics. Repeat clinical examination of the abdomen noted progressing distension but no peritonitis.

A discussion of treatment options and radiological examinations ensued and a preliminary plan for a laparoscopic defunctioning colostomy was decided. No further radiological work-up was performed and the diagnosis of large bowel obstruction was instead based on the pelvic ultrasound, the endoscopy, and clinical examinations.

The patient was thoroughly informed about the difficult situation

and treatment options and consented to a plan for diagnostic laparoscopy and cautious manipulation of the myoma during anaesthesia with hopes of relieving the obstruction and, if this was unsuccessful, a laparoscopic defunctioning colostomy.

The procedure was performed on the third day of admission; the laparoscopy confirmed the diagnosis of large bowel obstruction caused by obstruction in the smaller pelvis, and the bowel was viable without signs of perforation or tears to the serosa in any location. The abdomen was then deflated and dislodging attempts with bimanual vaginal pelvic manoeuvre was performed. The cervical myoma proved to be fixed and did not move in spite of several attempts to push the uterus upwards during anaesthesia, and consequently, a laparoscopic sigmoidostomy with a distal mucous fistula placed in the same trepanation site was created.

The fetus was viable after the surgical intervention and during the uneventful postoperative period. After flatus passage on the third postoperative day, the patient's abdominal symptoms disappeared, and CRP and WBC began to normalize. After ostomy training the patient was discharged on the seventh postoperative day.

At follow-up, no further complications and no further issues with bowel function were reported by the patient. A caesarean section was performed in gestation week 37 + 3 without any complications (APGAR 5 + 10 + 10). Indication for the caesarean section was the described myoma and the birth weight of 3370 g was within normal range (expected 2859 g +/- 2 standard deviations; 11th–89th percentile). The infant was, at the time of writing this case report, seven months old and in good health.

After discussion with the patient, a procedure to restore bowel continuity together with a hysterectomy including salpingectomy was scheduled. This operation was performed 11 months after the primary operation and was uneventful.

The patient was aware of her cervical myoma but was not informed about the risk of colonic obstruction associated with her pregnancy. An increase in the size of the myoma was expected but not specifically the impingement phenomenon with which she presented. Abortion was not an option for her due to the low likelihood of becoming pregnant again. She was offered other novel surgical approaches to excise or reduce the size of the myoma but deemed these too risky. She ultimately accepted the prospect of a defunctioning colostomy because this seemed to be the choice with least risk for the fetus.

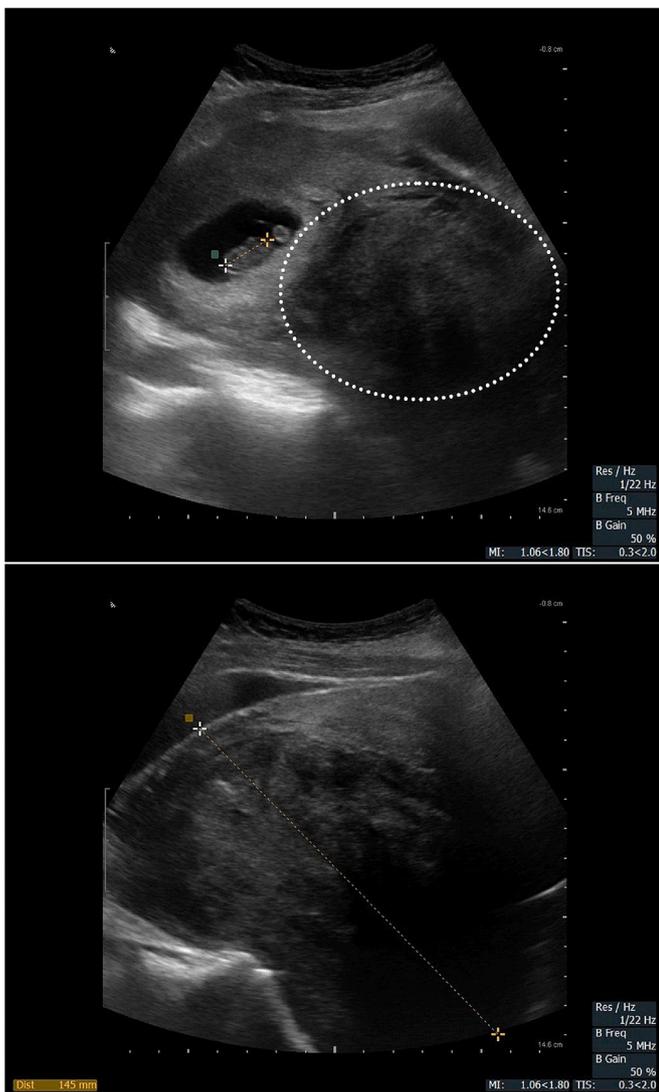


Fig. 2. Top: ultrasound image showing the cervical myoma (dotted line) with a viable fetus. Bottom: ultrasound image showing progression of the myoma in size and lodged against the promontory.

3. Discussion

Large bowel obstruction should always be considered a surgical emergency due to the risk of perforation and abdominal sepsis. There are several surgical options in the management of bowel obstruction. However, with benign aetiology, a distal colostomy could be advantageous due to its high success rate in relieving bowel obstruction and low rate of complications [5]. In this case, initial attempts at conservative management with oral osmotic agents, repeated enemas, and manual mobilisation of the impinged myoma proved unsuccessful. In retrospect, two considerations could be made. First, attempting conservative management in this situation was reasonable as this was deemed safe, and motivating the patient to undergo surgery without precluding conservative options would have been difficult. Second, the use of oral osmotic agents might have contributed to progression of bowel distension and should be used judiciously in cases with bowel obstruction.

The management of extremely rare clinical situations is always challenging because of the limited evidence. Obstruction in the second to third trimester of pregnancy or caused by expansive pathology of the uterus or cervix has been described previously [4,6]. However, when reviewing the literature, no other publications of large bowel obstruction in the first trimester secondary to cervical myomatosis as presented

in this report could be found. Any type of intestinal obstruction in pregnancy occurs in between 1 in 66,000 to 1 in 1500 pregnancies and is associated with considerable morbidity and mortality [1–3]. Furthermore, cervical myomas are found in less than 1% of women and treatment remains controversial [7,8]. There is no reliable evidence of successful myomectomy of cervical myomas in pregnancy. Hysterectomy remains the gold standard treatment for large cervical myomas but was not an acceptable option in the current case [9].

Correct diagnosis is essential in management, and MRI or pelvic ultrasound can be used as an alternative to conventional radiology [10]. Previous case reports have shown the feasibility of colonoscopy in aiding diagnosis [11]. In the third trimester, conservative non-operative treatment might be an option in some cases, but such a strategy may pose considerable risk especially for the unborn [4].

4. Conclusion

This case illustrates the importance of active management in a situation of severe colonic obstruction caused by pregnancy-related obstruction in the small pelvis. In this case, colonic perforation and abortion of the fetus were avoided by early creation of a defunctioning colostomy with a minimally invasive technique.

In rare, complex clinical situations with limited evidence, a multi-disciplinary approach is desirable. Given the specific circumstances, experienced clinicians from relevant specialties working together with the patient offer the best chance of a favourable outcome.

Contributors

Erik Agger, the primary author, was involved in patient care and in the drafting, editing and revision of the manuscript.

Carina Bjartling was involved in patient care and in the drafting and editing of the manuscript.

Tomas Vedin was involved in patient care and in the drafting and editing of the manuscript.

All authors approved the final version.

Funding

No funding from an external source supported the publication of this case report.

Patient consent

The patient gave written informed consent for the publication of this case report and the images/illustrations included.

Provenance and peer review

This article was not commissioned and was peer reviewed.

Acknowledgements

The authors would like to thank the patient for participation in this case report and the colleagues engaged in the care at all levels.

Conflict of interest statement

The authors declare that they have no conflict of interest regarding the publication of this article.

References

- [1] P.W. Perdue, H.W. Johnson, P.W. Stafford, Intestinal obstruction complicating pregnancy, *Am. J. Surg.* 164 (4) (1992) 384–388, [https://doi.org/10.1016/S0002-9610\(05\)80910-9](https://doi.org/10.1016/S0002-9610(05)80910-9).

- [2] M.M. Connolly, J.A. Unti, P.F. Nora, Bowel obstruction in pregnancy, *Surg. Clin. North Am.* 75 (1) (1995) 101–113, [https://doi.org/10.1016/S0039-6109\(16\)46537-0](https://doi.org/10.1016/S0039-6109(16)46537-0).
- [3] S.K. Zachariah, M.G. Fenn, Acute intestinal obstruction complicating pregnancy: diagnosis and surgical management, *BMJ Case Rep.* (2014), <https://doi.org/10.1136/bcr-2013-203235>, 2013–2015.
- [4] M. Najih, M. Abdellaoui, M.R. Hafidi, H. Laraqui, S. Alkandry, Acute intestinal obstruction in pregnancy - about five cases, *Pan Afr. Med. J.* 11 (2012) 40, <https://doi.org/10.53347/rID-35389>.
- [5] M. Pisano, L. Zorcolo, C. Merli, et al., WSES guidelines on colon and rectal cancer emergencies: obstruction and perforation, *World J. Emerg. Surg.* 13 (1) (2017) 1–27, <https://doi.org/10.1186/s13017-018-0192-3>, 2018.
- [6] L.M. Andersen, C.Y.S. Bong, M.J. Burstow, P.J. Yuide, Impingement by a polymyomatous uterus: a rare cause of large bowel obstruction, *J. Surg. Case Rep.* 2021 (5) (2021) 1–3, <https://doi.org/10.1093/jscr/rjab182>.
- [7] A.J. Tiltman, Leiomyomas of the uterine cervix: a study of frequency, *Int. J. Gynecol. Pathol.* 17 (3) (1998) 231–234, <https://doi.org/10.1097/00004347-199807000-00006>.
- [8] J. Wong, G.H.C. Tan, R. Nadarajah, M. Teo, Case Report: Novel management of a giant cervical myoma in a premenopausal patient, *BMJ Case Rep.* 2017 (2017), <https://doi.org/10.1136/bcr-2017-221408>.
- [9] F. Ferrari, S. Forte, G. Valenti, et al., Current treatment options for cervical leiomyomas: a systematic review of literature, *Medicina (B Aires)*. 57 (2) (2021) 1–15, <https://doi.org/10.3390/MEDICINA57020092>.
- [10] A. Daimon, Y. Terai, Y. Nagayasu, et al., A case of intestinal obstruction in pregnancy diagnosed by MRI and treated by intravenous hyperalimentation, *Case Rep. Obstet. Gynecol.* 2016 (2016) 1–4, <https://doi.org/10.1155/2016/8704035>.
- [11] M.S. Mirza, M. Mulla, R.I. Hall, Large bowel obstruction in pregnancy: a rare entity, an unusual cause, *Arch. Gynecol. Obstet.* 279 (2) (2009) 177–178, <https://doi.org/10.1007/s00404-008-0656-x>.