

Acute intestinal obstruction due to a non-involuting uterus after cesarean section: case report

K. Karaman¹, M. Ercan¹, H. Demir², M. Yener Uzunoglu², S. Bostanci³

¹ *Sakarya University, Faculty of Medicine, Department of General Surgery, Sakarya*

² *Sakarya Teaching and Research Hospital, Department of General Surgery, Sakarya*

³ *Sakarya Teaching and Research Hospital, Department of Obstetrics and Gynecology, Sakarya (Turkey)*

Summary

The involution of the uterus is influenced by a number of factors such as advanced childbearing age, electrolyte disturbances, multiparity, repeated cesarean sections, and vaginal infections. The authors report the management of a clinical case of a 41-year-old female who presented with acute intestinal obstruction due to a non-involuting uterus after cesarean section.

Key words: Non-involuting uterus; Intestinal obstruction; Cesarean section.

Introduction

Reasons for acute intestinal obstruction after cesarean sections are usually related to formation of adhesions [1]. Although rare, acute pseudo-colonic obstruction (Ogilvie's syndrome) has also been reported after cesarean sections [2]. The authors report the management of a clinical case of a 41-year-old female who presented with acute intestinal obstruction due to a non-involuting uterus after cesarean section.

Case Report

A 41-year-old-female was referred for intestinal obstruction from an obstetric center on the first postpartum day after a successful delivery by cesarean section. This was the fourth live birth and her first cesarean section after three vaginal births. Indication for cesarean section was due to delay over one week in delivery after 40 weeks of pregnancy and fetal distress. Physical examination revealed abdominal distention with rebound tenderness. Her white blood cell count was 15,000/mm³. Plain abdominal graphics showed dilated multiple small and large bowel segments (Figures 1A and B). Abdominal computerized tomography showed a large non involution uterus measuring approximately 20 cm in diameter accompanying dilated small and large bowel segments which had been thought as an acute abdominal compartment syndrome requiring immediate decompression (Figure 1C). Thus, the patient underwent an emergent abdominal laparotomy. During exploration, all small bowel segments and the colon were diffusely dilated from Treitz ligament to recto-sigmoid region. The recto-sigmoid colon was compressed between the uterus and sacral promontorium, which was the cause of the mechanic obstruction (Figure 1D). A hole was performed to the transverse colon to relieve distention by milking gas and bowel fluid. After intraoperative consultation to obstetric and gynecology department for hysterectomy, it was decided to leave the uterus in situ because of legal reasons and fears that the patient may want further pregnancies in the future. Additionally, intravenous oxytocin and

methylergonovine maleate were applied for uterine involution. However, little response was observed. The hole in the transverse colon could be closed by primary repair, but a transverse loop colostomy was performed instead, with the attempt to control damage while performing involution of the uterus and compression of uterus on recto-sigmoid colon that persisted throughout this process. Patient's postoperative course was uneventful and she was discharged on the fifth postoperative day. Two months later, a successful colostomy closure was performed.

Discussion

There are some risks of complications after cesarean section including adhesions, infections and wound complications, bleeding, bowel injury and obstruction, hysterectomy, extended operative time and hospital stay, and delays in delivery. Intestinal obstructions after cesarean sections are related usually to adhesions, which can develop after infection, surgery, and chemical irritation. The normal wound-healing process after injury to the peritoneum involves a complex inflammatory cascade of fibrin deposition, coagulation, and influx of inflammatory cells resulting in band and adhesion formation [3]. Another cause of intestinal obstruction after cesarean section, although rare, is acute pseudo-colonic obstruction known as Ogilvie's syndrome in which dilatation of large bowel segments occurs in the absence of a mechanic obstruction [4]. However the disease is seen mainly in patients who have co-existing medical problems (diabetes mellitus, major depression), and immobility [5]. Drugs (opioids, tocolytics, etc) and electrolyte disturbances may also responsible [6]. However, primary mechanism of acute intestinal obstruction in the present case was compression of a non-involuting uterus on recto-sigmoid colon. After research of the English literature, this is the second reported case [7].

Revised manuscript accepted for publication December 15, 2014

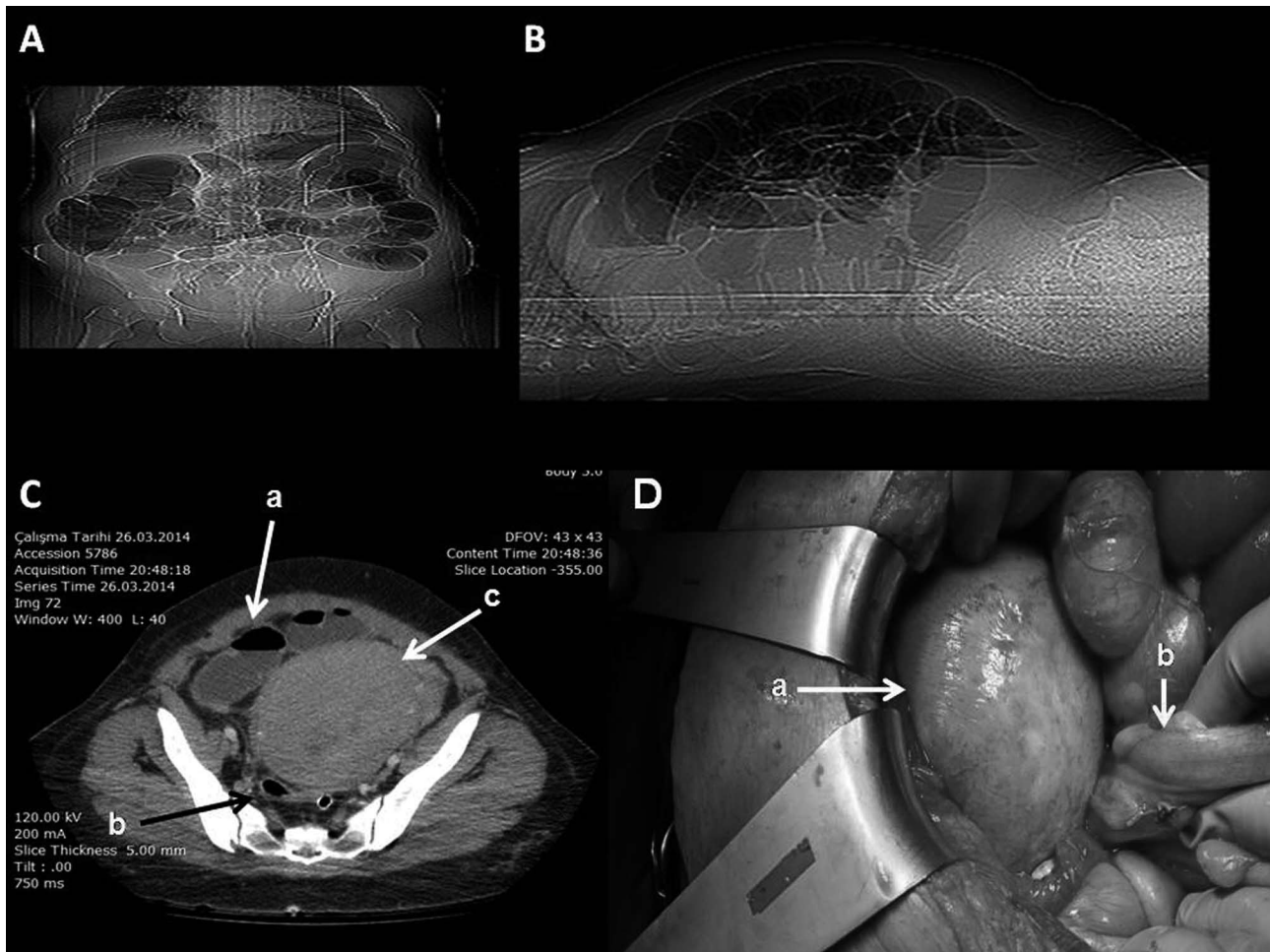


Figure 1. — A, B: Dilated small bowel and colonic segments in plain graphics. C: Abdominal computerized tomography findings: a) Dilated small bowel segments, b) non-involutedly large uterus, and c) compressed recto-sigmoid colon between uterus and sacral promontorium. D: Intraoperative findings: a) non-involuted uterus and b) compressed recto-sigmoid colon behind the uterus.

The involution of the uterus is influenced by a number of factors such as age, abnormalities associated with calving (dystocia, retained fetal membranes, hypocalcemia, ketosis, twin births, and metritis), and a delayed return to normal cyclic activity in the ovaries [8]. Multiparity is another factor in delaying uterine involution which is explained by the increased uterine size [9-11]. In the clinical study by Al-Bassam, it was found that uterine involution is delayed in women delivered newborns weighing more than four kg, and in women who with high vaginal swab show presence of pathogenic organism. Further, uterine involution was faster in women delivered vaginally compared to those delivered by emergency cesarean section regardless to the weight of the newborn [12]. Dimitrow *et al.* observed a slower and unsteady uterine involution after cesarean section, which was more prominent after re-sections [13]. The mean reason of a non-involuted uterus in the present case could not be elucidated. The infant's born weight was 3.5 kg, which is considered in normal range, and this was her

first cesarean section. Neither electrolyte deficiencies such as hypomagnesemia or hypocalcemia nor vaginal infection were detected. Multiparity and advanced childbearing age may be contributed factors for an atonic uterus leading to delay in involution of uterus in this case.

In conclusion, although uncommon, a non-involuted uterus can lead in the early postoperative period to acute intestinal obstruction by compressing the recto-sigmoid colon.

References

- [1] Andolf E., Thorsell M., Källén K.: "Cesarean delivery and risk for postoperative adhesions and intestinal obstruction: a nested case-control study of the Swedish Medical Birth Registry". *Am. J. Obstet. Gynecol.*, 2010, 203, 406.e1.
- [2] Roberts C.A.: "Ogilvie's syndrome after cesarean delivery". *J. Obstet. Gynecol. Neonatal. Nurs.*, 2000, 29, 239.
- [3] Lyell D.J.: "Adhesions and perioperative complications of repeat cesarean delivery". *Am. J. Obstet. Gynecol.*, 2011, 205, S11.

- [4] Ogilvie H.: "Large-intestine colic due to sympathetic deprivation; a new clinical syndrome". *Br. Med. J.*, 1948, 2, 671.
- [5] Ernst R.M., Müller R.C., Hess T.: "Ogilvie's syndrome (acute idiopathic colonic pseudo-obstruction) after Caesarean section". *Gynaecol. Geburtshilfliche. Rundsch.*, 2007, 47, 236.
- [6] Ohri S.K., Patel T., Desa L., Spencer J.: "Drug-induced colonic pseudo-obstruction. Report of a case". *Dis. Colon. Rectum.*, 1991, 34, 347.
- [7] Rozicka P., Pesková M., Sváb J., Fried M.: "An unusual cause of intestinal obstruction in the puerperal period (case report)". *Sb. Lek.*, 1997, 98, 35.
- [8] Noakes D.: "The puerperium". In: Noakes D, Timothy J, Parkinson and Gary C., (eds). *Veterinary reproduction and obstetrics*. 9th ed. London, England: Saunders, 2009, 194.
- [9] Morrow D.A., Roberts S.J., McEntee K.: "Postpartum ovarian activity and involution of the uterus and cervix in dairy cattle. II. Involution of uterus and cervix". *Cornell Vet.*, 1969, 59, 190.
- [10] Zhang J., Deng L.X., Zhang H.L., Hua G.H., Han L., Zhu Y., *et al.*: "Effects of parity on uterine involution and resumption of ovarian activities in postpartum Chinese Holstein dairy cows". *J. Dairy. Sci.*, 2010, 93, 1979.
- [11] Olayemi O., Omigbodun A.A., Obajimi M.O., Odukogbe A.A., Agunloye A.M., Aimakhu C.O., Okunlola M.A.: "Ultrasound assessment of the effect of parity on postpartum uterine involution". *J. Obstet. Gynaecol.*, 2002, 22, 381.
- [12] Al-Bassam A.N.: "Uterine involution after term childbirth". *J. Fac. Med. Baghdad.*, 2009, 51, 8.
- [13] Dimitrov A., Nikolov A., Nashar S., Mikhova M., Pavlova E., Krüsteva K.: "Puerperal uterine involution according to the method of delivery". *Akush. Ginekol. (Sofia)*, 2007, 46, 14.

Address reprint requests to:

K. KARAMAN, M.D.

Arabacıalanı mah Eski Kazım Paşa Cad No:76

Atıoğlu Sitesi B Blok Kapısı Girişi Daire: 4

Serdivan, 54055, Sakarya (Turkey)

e-mail: karaman_kerem@yahoo.com.tr