CASE REPORT

INCARCERATED GRAVID UTERUS IN VENTRAL HERNIA

Sara Qadir[1], Sajid Malik[2], Nimra Iftikhar[1]
Department of Obs & Gynae, Department of Surgery, Jinnah Hospital Lahore-Pakistan

Incarcerated gravid uterus for in ventral hernia is an extremely rare obstetrical and surgical problem which contributes to pregnancy related complications. We searched for literature to identify aetiology, presentation, complications, and management options for incarcerated gravid uterus, and are presenting this case with literature review. This extremely rare case report, first ever from Pakistan, of an incisional hernia containing gravid uterus as its contents and is bulging out of abdominal cavity. She presented at 27 weeks with ulceration of ventral hernia skin. She was offered a conservative treatment keeping in view maternal and foetal monitoring until term. A full-term elective lower segment caesarean section (LSCS) followed by open mesh repair was done. A successful outcome was observed. There are limited treatment options for uterine incarceration into ventral hernia, but definitive diagnosis allows procedures to treat and to reduce severe maternal and foetal complications. There is no consensus over the management of this rare condition. A tailor approach should be opted in each case. If uncomplicated, a conservative approach until term followed by delivery or LSCS and hernioplasty is a good option.

Keywords: Hernia; Gravid; Incarcerated; Maternal

Citation: Qadir S, Malik S, Iftikhar N. Incarcerated gravid uterus in ventral hernia. J Ayub Med Coll Abbottabad 2023;35(1):169–73.

DOI: 10.55519/JAMC-01-11054

INTRODUCTION

Incisional hernia of ventral abdominal wall is not uncommon condition especially in females of reproductive age.[1] Containing gravid uterus as a content of this hernia sac is, however, an extremely rare entity.[2–6] Very scares data is available in literature on incarcerated gravid uterus herniation in ventral hernia sac and none has been reported so far from the Pakistan.[7] Maternal complications like skin ulcerations, ruptured uterus, incarceration and strangulations are higher in these patients as compared to other gravid patients; foetal complications like Intra uterine growth retardation (IUGR), mal-presentation, prematurity, Intra uterine death (IUD) and even still birth are possible outcome.[7–9] Therefore, very careful assessment, monitoring and following until term for safe delivery is warranted in these patients while at the same time have to prevent complications of hernia as well.[9,10] We report this first case of incarcerated gravid uterus in an incisional ventral hernia from the Pakistan which was followed well and managed successfully until delivered and later repaired. Consent of patient was obtained prior to this case report, and an exemption from ethical review board was obtained as well.

CASE REPORT

This is a case report of 27-year female who presented as Gravida two, Para one (G2P1A0) at 27 weeks of gestation to maternity clinic of Jinnah hospital Lahore with abnormally protuberant abdominal swelling and an ulceration of overlying skin with large area of excoriation (Figures 1-3). Her obstetrical history revealed previous emergency lower segment Caesarean section (EmLSCS) 18 months ago due to foetal distress and grade III meconium. She recovered well from that but noticed a bugle few months after previous EmLSCS which never bothered her as it was spontaneously reducible. She lost her follow up afterward and reported again on 27 weeks of gestational amenorrhea with increase in size of swelling. Examination revealed a large ventral hernia containing a gravid uterus with a fundal height of 27 cm, and with palpable foetal parts and movements. (Figures 1-5)

Figure-1: Incarcerated gravid uterus in ventral Hernia Inferior View - 27 week

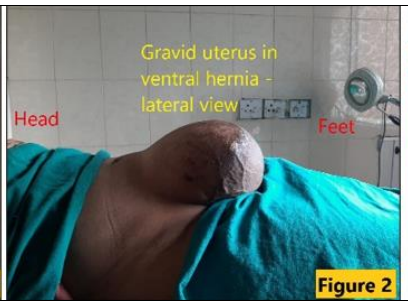

Figure-2: Incarcerated gravid uterus in ventral Hernia Lateral View - 27 weeks

Figure-3: Incarcerated gravid uterus in ventral Hernia superior view & previous scar and ulcer - 27 weeks

Figure-4: Incarcerated gravid uterus in ventral Hernia with ulcer - 27 weeks

Figure-5: Obstetrical examination - 27 weeks

Overlying skin was stretched, excoriated with an ulcer of approximately 1.7×2.2 cm just lateral to summit on left side (Figure-4). Uterus was irreducible and incarcerated but showed no features of strangulation (Figure-5). A plan for admission made to observe sign of strangulation, specialist hernia surgery team was taken on board for joint care. During this stay**,** her blood pressure and pulse remained within normal range. Ultrasound examination showed an anterior abdominal wall defect of approximately 9.3×6.6 cm containing incarcerated gravid uterus as its content. Its showed normal foetal growth and parameters corresponding to 27 weeks of gestation {Amniotic fluid index (AFI)= 15 cm; Placenta= Fundo Posterior; Bi Parietal Diameter (BPD)= 7 cm; Femur Length (FL)= 4.9 cm; Foetal abdominal circumference (FAC)= 23 cm}. Her Blood reports showed Hb 11.2 g/dl, WCC 10.0, Platelets 210, FBS 92mg/dl; Her urine complete examination was normal with nonreactive VDRL for syphilis. She was daily monitored for signs of strangulation or other feto-maternal compromise. Her two weekly foetal growth scans until 37 weeks showed no abnormality. Ulcer was treated using Duodern skin patches 5×5 cm replaced every 48 Hrs which showed marked improvement with almost complete healing of ulcer as well by 37 week. (Figures 6, 7 & 8)

Figure-6: Ventral hernia containing uterus hanging forward standing posture- 35 weeks

Figure-7: Surgical examination for ulceration showed healed ulcer with granulation

Figure-8: Obstetrical examination in 35 weeks

An elective lower segment caesarean section (El LSCS) was planned in 38 weeks with concomitant retro rectus hernioplasty due to incarcerated gravid uterus and breech presentation. A lower transverse skin incision made and uterus opened through lower segment transverse incision. A baby boy of weight 3.1 kg was delivered as breech. His APGAR score was 8 & 9 at one and 5 min respectively. (Figures 9-12) Uterine incision was stitched in two layers and complete haemostasis assured. Uterus placed back in peritoneal cavity through hernia defect. (Figures 13–16)

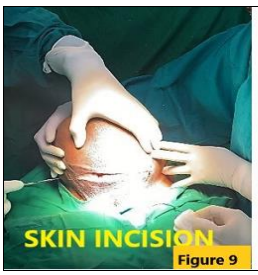

Figure-9: Skin incision as low transverse incision

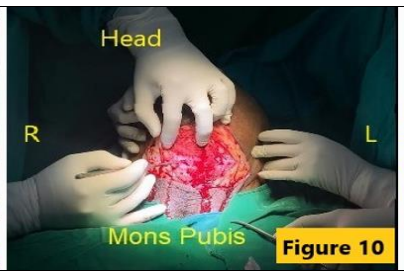

Figure-10: Subcutaneous incision showing no rectus sheath

Figure-11: Lower segment of uterus approached for transverse incision

Figure-12: Baby delivered through LSCS

Figure-13: First layer of uterine incision closure

Figure-14: Second layer of uterine incision closure

Figure-15: Uterine incision stitched with haemostasis

Figure-16: Uterus repositioned in peritoneal cavity and hernia sac identified

Peritoneum (P) and posterior rectus sheath (PRS) identified a P-RAS flap raised along both edges of defect. (Figure-17) Laxity of myo-fascial bundle due to pregnancy led an excellent myo-fascial medialization for closure of defect. P-RAS flap closed using Vicryle 2/0 suture and a sublay mesh of 20×15 cm placed like an open Rives-Stoppa repair (ORS) in a retromuscular fashion and anterior layer closed (Figures 18, 19). 20 ml Bupicaine 0.25% injected (10 ml on each side) as transverse abdominis block for pain control. Anterior rectus sheath closed with using PDS 0 with interlocking sutures. Redundant skin including ulcerated healed scar area excised and skin closed with prolene 2/0 sutures (Figures 20-23). Recovery was uneventful. Post-operative abdominal binder for 4–8 weeks was prescribed. Stitches removed on 7 post op day. 1, 4, and 12 weeks follow up showed no signs of recurrence, seroma or surgical site complications. A last follow up at 9 months showed full recovery with no post-operative complications or recurrence. Baby is alive, healthy and achieving normal milestones.

Figure-17: Peritoneum-Posterior rectus sheath flap creation

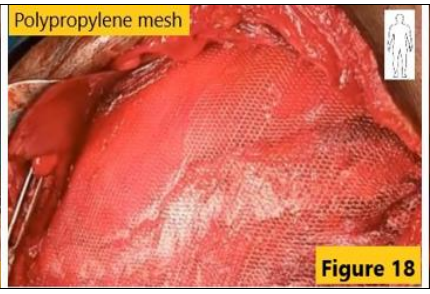

Figure-18: Sublay mesh placed in retromuscular space

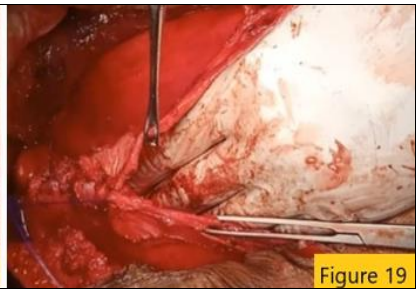

Figure-19: Peritoneum-Posterior rectus sheath flap closure

Figure-20: Redundant skin being excised for proper skin approximation

Figure-21: Excised redundant and ulcerated Skin

Figure-22: fascial closed

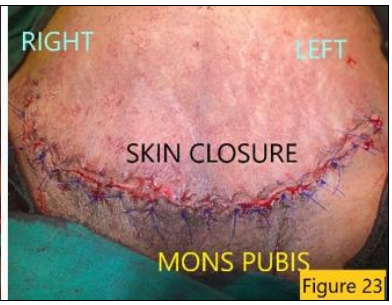

Figure-23: Skin closure

DISCUSSION

The incidence of incisional hernia ranges from 4 to 20% after abdominal wall surgeries, with almost 3.1% contribution after lower segment caesarean section (LSCS).[1,11,13] This incidence is growing with increased number of LSCS, compromising mother and child health in subsequent pregnancies.[11] Other factors like midline vertical incision, need of any additional surgical procedure, post-operative abdominal distention, intra-abdominal sepsis, surgical site infections leading to wound dehiscence, fever, wound healing with secondary intention, all or combinations of any of these may influence incisional hernia formations after previous LSCS.[2–4]

Presence of gravid uterus in an incisional hernia is an extremely rare condition which can impart great obstetrical risk on maternal and foetal health necessitating emergency management.[7] These risks includes ulceration of stretched skin, pre term labour, rupture of previous scar of LSCS, post-partum haemorrhage, accidental haemorrhage, strangulation, rupture of the lower uterine segment, intra-uterine growth retardation, foetal death, obstructed labour, and plenty others, all of which can occur as alone or in combination with others.[2,4,6,8] Out of these, the most serious complication is incarcerated gravid uterus with or without strangulation along with ulceration of overlying skin which can bleed and can cause a haemorrhagic shock.[7,13] Excoriation and ulceration of overlying skin of hernia sac without incarceration or strangulation is also reported in literature.[10] Our patient didn't have any of these complications luckily because she was diagnosed at an earlier stage, and was hospitalized for close monitoring and management.

Ventral hernia is classified as primary and incisional hernias, and herniation of gravid uterus is divided into umbilical and incisional variety.[14] We report this case as an incarcerated gravid uterus in ventral (incisional) hernia. A literature search for incarcerated gravid uterus with or without strangulation on PubMed and google scholar revealed 9 papers only with none reported from Pakistan.[2–8,10,13]

The management of these patients with incarcerated gravid uterus in ventral hernia is a surgical dilemma as there is no consensus regarding management in described scarce available literature. A conservative management with manual reduction in antenatal period was seen in four patients, while two patients underwent herniorrhaphy with in antenatal period in 2nd and 3rd trimester respectively.[2–5,7,15] General anaesthesia during 2nd and 3rd trimester puts maternal and foetus under significant risk of complications. And optimum achievement of hernia reduction by these manures is hardly achievable. Further early delivery contributes to the risk of child health as well. Authors recommend strangulation as a true indication for surgical interventional in antenatal period as initially described by Saha PK *et al*.[7] Normal vaginal delivery (NVD) was performed in two patients because presenting part was engaged and there was no other contraindication to NVD.[2,13] Most of these cases underwent a classical caesarean section as lower segment was not approachable due to shape and positioning of uterus. Therefore, authors suggest a tailor approach in these patients to decide for the best option according to shape and contour of uterus, positioning of foetus and placental location. Our patient had fundo-posterior placenta with breach presentation and lower segment was accessible therefore LSCS with hernioplasty was performed in our case.

International Endo-Hernia Society (IEHS) reported in 2019 that the recurrence outcome based on laparoscopic vs open technique seems less pronounced as thought.[16] But they reported that incisional hernia with mesh is superior over suture repair in terms of recurrence and post-operative long term outcome.[17] The most widely used mesh for these repairs is the polypropylene and is mostly placed in sublay fashion.[18] As in a low socio-economic country with poor follow up and difficulty in offering optimal post-operative management due to scarce medical facilities in the presence of large defect size and week myofascial flaps didn't make it suitable to perform herniorrhaphy. We offered an elective LSCS followed with an open retro-muscular polypropylene 20×15 cm mesh repair in sublay fashion. Post-operative abdominal binder was used to achieve good results. However long-term outcome of such cases is not reported in literature and would need a multicentric larger group study with long term outcome to suggest the best optimal treatment.

CONCLUSION

Based on literature review, management of incarcerated gravid uterus in ventral (incisional) hernia needs a tailor approach and should plan based on gestational age and severity of complications. Diagnosis is mainly clinical but ultrasound is essential to outline severity of complications. We recommend conservative management and planned El LSCS at term followed with hernia repair with mesh. However, in case of feto-maternal or hernia complication, an emergency caesarean section is

warranted to minimize morbidity and mortality, followed with concomitant or interval mesh repair of hernia.

Conflict of interest: There is no conflict of interest.

Informed consent: Informed consent was taken from all patients for this study.

Acknowledgment: None

REFERENCES

1. O'Dwyer PJ, Courtney CA. Factors involved in abdominal wall closure and subsequent incisional hernia. Surgeon 2003;1(1):17–22.
2. Fullman PM. Incisional hernia containing an incarcerated twin pregnant uterus. Am J Obstet Gynecol 1971;111(2):308–9.
3. Deka D, Banerjee N, Takkar D. Incarcerated pregnant uterus in an incisional hernia. Int J Gynaecol Obstet 2000;70(3):377–9.
4. Dare FO, Makinde OO, Lalwal OO. Gravid uterus in an anterior abdominal wall hernia of a Nigerian woman. Int J Gynaecol Obstet 1990;32(4):377–9.
5. Sahul A, Bupathy A. Evisceration of pregnant uterus through incisional hernia site. J Obstet Gynaecol Res 1990;32(4):338–40.
6. Rao Radha S, Shankaregowda HS. A case of herniated gravid uterus through a laparotomy scar. Indian J Med Sci 2006;60(4):154–7.
7. Saha PK, Rohilla M, Prasad GR, Dhaliwal LK, Gupta I. Herniation of gravid uterus: report of 2 cases and review of literature. MedGenMed 2006;8(4):14.
8. Ray KK, Aggarwal S, Banerjee K, Kumar S, Chanana C. Gravid uterus in an incisional hernia leading to burst abdomen. Int J Gynaecol Obstet 2005;5(1):2–5.
9. Adesunkami AR, Faleyinmu B. Incidence and aetiological factors of incisional hernia in a post caesarian operation in a Nigerian hospital. J Obstet Gynaecol 2003;23(3):258–60.
10. Malhotra M, Sharma JB, Wadhwa L, Arora R. Successful pregnancy outcome after caesarian section in a case of gravid uterus growing in an incisional hernia of the anterior abdominal wall. Indian J Med Sci 2003;57(11):501–3.
11. Burger JW, Luijendijk RW, Hop WC, Halm JA, Verdaasdonk EG, Jeekel J. Long-term follow-up of a randomized controlled trial of suture versus mesh repair of incisional hernia. Ann Surg 2004;240(4):578–83.
12. Snyder C, Graham L, Vick CC, Gray SH, Finan KR, Hawn MT. Patient satisfaction, chronic pain, and quality of life after elective incisional hernia repair: effects of recurrence and repair technique. Hernia 2011;15(2):123–9.
13. Nagpal M, Kaur S. Herniated pregnant uterus with bleeding from previous abdominal scar. J Obstet Gynaecol India 2003;53:283.
14. Muysoms FE, Miserez M, Berrevoet F, Campanelli G, Champault GG, Chelala E, *et al*. Classification of primary and incisional abdominal wall hernias. Hernia 2009;13(4):407–14.
15. Adesunkanmi ARK, Faleyimu B. Incidence and aetiological factor of incisional hernia in past cesarean operations in a Nigerian hospital. J Obstet Gynecol 2003;23(3):258–60.
16. Bittner R, Bain K, Bansal VK, Berrevoet F, Bingener-Casey J, Chen D, *et al*. Update of Guidelines for laparoscopic treatment of ventral and incisional abdominal wall hernias (International Endohernia Society (IEHS))-Part A. Surg Endosc 2019;33(10):3069–139.
17. Luijendijk RW, Hop WC, van den Tol MP, de Lange DC, Braaksma MM, IJzermans JN, *et al*. A comparison of suture repair with mesh repair for incisional hernia. N Engl J Med 2000;343(6):392–8.
18. Schumpelick V, Klinge U, Junge K, Stumpf M. Incisional abdominal hernia: the open mesh repair. Langenbecks Arch Surg 2004;389(1):1–5.

Submitted: June 7, 2022	*Revised: July 24, 2022*	*Accepted: July 28, 2022*

Address for Correspondence:

Sajid Malik, Assistant Professor of Surgery, AIMC/ Jinnah Hospital Lahore-Pakistan

Cell: +92 320 555 1014

Email: drsajidmalik@yahoo.com