

Placenta Accreta Spectrum in an Unscarred Uterus: A Rare and Unexpected Obstetric Emergency

ABSTRACT

Placenta accreta spectrum (PAS) represents a spectrum of abnormal trophoblastic invasion into the myometrium and is a major cause of obstetric haemorrhage and maternal morbidity. It is predominantly associated with uterine scarring and placenta previa. Occurrence in a primigravida with an unscarred uterus and no identifiable risk factors is rare and frequently unsuspected. We report a case of a 24-year-old unregistered primigravida at 38 weeks of gestation who presented with severe preeclampsia and acute fetal distress necessitating emergency cesarean delivery. Intraoperatively, the placenta failed to separate, raising suspicion of PAS. Given minimal hemorrhage and hemodynamic stability, conservative management with the placenta left in situ was undertaken. Postoperative imaging suggested increta/percreta. A single dose of methotrexate was administered, followed by spontaneous vaginal expulsion of the placenta on postoperative day three. The patient remained clinically stable, avoided hysterectomy, and fertility was preserved. This case underscores the importance of intraoperative vigilance and individualized management in unexpected PAS, particularly in unregistered pregnancies.

Keywords: Placenta accreta spectrum, Unscarred uterus, Primigravida, Conservative management, Emergency caesarean section

Introduction

Placenta accreta spectrum (PAS) comprises a group of disorders characterized by abnormal placental adherence and invasion into the uterine wall due to defective decidualization at the implantation site. It includes placenta accreta (superficial attachment to the myometrium), increta (invasion into the myometrium), and percreta (penetration through the serosa, occasionally involving adjacent organs such as the bladder). PAS represents a significant cause of severe obstetric hemorrhage and remains a leading indication for peripartum hysterectomy worldwide ⁽¹⁾.

Over the past four decades, the incidence of PAS has risen markedly, increasing from approximately 1 in 2500 deliveries in the 1980s to nearly 1 in 533 deliveries in contemporary series ^(1,2). This rise closely parallels the global escalation in cesarean delivery rates. Previous cesarean section, particularly in combination with placenta previa, is the most significant risk factor, with risk increasing proportionally with the number of prior uterine surgeries ⁽³⁾. Additional predisposing factors include dilatation and curettage, myomectomy, multiparity, advanced maternal age, and assisted reproductive technologies ^(3,8).

The pathogenesis of PAS involves absence or deficiency of the decidua basalis and Nitabuch's layer, allowing direct anchoring and abnormal trophoblastic invasion into the myometrium ⁽⁵⁾. In most reported cases, PAS occurs in a scarred uterus. Occurrence in an

39 unscarred uterus without identifiable risk factors is distinctly uncommon and remains poorly
40 understood.

41 Antenatal diagnosis using ultrasonography and color Doppler imaging demonstrates high
42 sensitivity for PAS, while magnetic resonance imaging (MRI) serves as an adjunctive
43 modality in equivocal cases or suspected deep invasion ⁽⁵⁾. Early identification enables
44 planned delivery in tertiary care centers with multidisciplinary expertise, significantly
45 reducing maternal morbidity ⁽⁹⁾. However, undiagnosed PAS encountered intraoperatively
46 during emergency cesarean section presents a complex and potentially catastrophic scenario.

47 We report a rare case of placenta accreta spectrum in an unregistered primigravida with an
48 unscarred uterus, diagnosed unexpectedly during emergency cesarean section performed for
49 severe preeclampsia with fetal distress, and successfully managed conservatively with
50 preservation of fertility.

51 **CASE REPORT**

52 A 24-year-old unregistered primigravida at 38 weeks of gestation presented to the labour
53 room of HBT Medical College and Dr. R. N. Cooper Municipal General Hospital with
54 complaints of severe headache, blurring of vision, and abdominal pain of acute onset. On
55 admission, her blood pressure was 170/100 mmHg. She was diagnosed with severe
56 preeclampsia and immediate antihypertensive management was initiated.

57 The patient had irregular antenatal follow-up. She had attended once at confirmation of
58 pregnancy at approximately 10 weeks and again at around 32 weeks of gestation. No detailed
59 anomaly scan or targeted placental evaluation had been performed. There was no history of
60 previous cesarean section, uterine curettage, myomectomy, placenta previa, infertility
61 treatment, or any prior uterine instrumentation.

62 During initial evaluation in the labour room, non-stress testing revealed non reactive NST
63 suggestive of late decelerations . In view of severe preeclampsia and evidence of acute fetal
64 compromise and breech presentation ,a decision was made to proceed with emergency lower
65 segment cesarean section within one hour of admission. Due to the emergent nature of the
66 situation, there was insufficient time for detailed preoperative placental imaging.

67 Intraoperatively, a live male neonate weighing 2.2 kg was delivered. The urinary bladder was
68 carefully dissected and reflected inferiorly without difficulty or injury. Estimated
69 intraoperative blood loss was approximately 800 ml.

70 Following delivery of the new born , controlled cord traction was attempted to deliver the
71 placenta. However, the placenta failed to separate. Gentle manual removal was attempted, but
72 no distinct cleavage plane between the placenta and the myometrium could be identified. The
73 placental tissue appeared firmly adherent to the uterine wall, raising strong suspicion of
74 placenta accreta spectrum.(figure 1)

75 Importantly, despite failed placental separation, there was no torrential haemorrhage. The
76 patient remained hemodynamically stable, and uterine tone was adequate following
77 administration of uterotonics including oxytocin.

78 Given the patient's primigravida status, absence of active hemorrhage, and stable
79 hemodynamic condition, a multidisciplinary intraoperative discussion was undertaken with
80 senior obstetric consultants. In order to avoid the morbidity of emergency peripartum
81 hysterectomy and preserve future fertility, a decision was made to adopt conservative
82 management.

83 The umbilical cord was ligated close to its placental insertion and cut.(figure 2) The placenta
84 was left in situ, and the uterine incision was closed in layers. (figure 3)Haemostasis was
85 ensured before abdominal closure.

86 Postoperatively, the patient was closely monitored in the obstetric high-dependency setting.
87 Serial complete blood counts and inflammatory markers (C-reactive protein) were performed
88 to monitor for early signs of infection or secondary hemorrhage. The patient remained
89 afebrile and hemodynamically stable.

90 On postoperative day two, ultrasonography demonstrated retained placental tissue suggestive
91 of placenta increta. Magnetic resonance imaging was performed and showed findings
92 suggestive of deeper invasion consistent with possible placenta percreta.

93 In view of imaging findings and to facilitate placental involution, a single dose of
94 methotrexate was administered after multidisciplinary discussion. On postoperative day three,
95 the patient spontaneously expelled the placenta vaginally in toto. (figure 4) There was no
96 significant hemorrhage or clinical evidence of sepsis. No intensive care admission was
97 required.

98 Both mother and neonate were discharged in stable condition. The patient was counselled
99 regarding future pregnancies and the need for early antenatal registration and targeted
100 placental assessment.

101 **DISCUSSION**

102 Placenta accreta spectrum (PAS) is predominantly associated with uterine scarring,
103 particularly previous cesarean delivery, and placenta previa^(1,2). The risk increases
104 progressively with the number of prior cesarean sections and may exceed 40% when placenta
105 previa coexists with multiple uterine scars^(1,3). Consequently, PAS occurring in a
106 primigravida with an unscarred uterus and no identifiable risk factors represents a distinctly
107 uncommon clinical entity.

108 The pathophysiology of PAS involves defective decidualization and absence of the Nitabuch
109 layer at the implantation site, permitting abnormal trophoblastic invasion into the
110 myometrium⁽⁵⁾. While most cases are linked to scarred endometrium, sporadic occurrences in
111 unscarred uteri suggest that additional, yet poorly understood mechanisms may contribute to
112 abnormal placentation.

113 In the present case, absence of established risk factors and irregular antenatal follow-up
114 limited clinical suspicion. The patient was unregistered and had not undergone detailed
115 placental assessment during pregnancy. Antenatal diagnosis using ultrasonography and color
116 Doppler has demonstrated high sensitivity for PAS, with MRI serving as a complementary
117 modality in equivocal or suspected invasive cases⁽⁵⁾. Early diagnosis allows planned

118 cesarean hysterectomy in tertiary centers with multidisciplinary teams, which significantly
119 reduces maternal morbidity⁽⁹⁾.

120 However, our patient presented as an obstetric emergency with severe preeclampsia and acute
121 fetal distress, necessitating immediate surgical intervention. In such time-critical scenarios,
122 maternal stabilization and expedited delivery take precedence, leaving limited opportunity for
123 comprehensive placental mapping. The diagnosis of PAS was therefore made intraoperatively
124 when the placenta failed to separate and no cleavage plane could be identified.

125 **Diagnostic Considerations**

126 Intraoperative recognition of PAS is crucial. Forceful manual removal of an abnormally
127 adherent placenta can precipitate catastrophic hemorrhage and disseminated intravascular
128 coagulation. In this case, controlled attempts at placental separation were appropriately
129 abandoned once abnormal adherence was suspected. The absence of massive hemorrhage
130 allowed time for deliberation regarding management strategy.

131 Postoperative imaging demonstrated features suggestive of placenta increta on ultrasound and
132 possible percreta on MRI. While MRI improves specificity in assessing depth of invasion, it
133 may occasionally overestimate placental penetration⁽⁵⁾. Nonetheless, imaging findings
134 reinforced the need for vigilant monitoring.

135 **Obstetric Management and Fertility Preservation**

136 Planned cesarean hysterectomy with the placenta left in situ remains the standard
137 recommended management for PAS, particularly in cases of suspected percreta⁽³⁾. This
138 approach minimizes intraoperative hemorrhage but results in permanent loss of fertility.

139 Conservative management, defined as leaving the placenta in situ with close surveillance, has
140 emerged as an alternative in carefully selected hemodynamically stable patients who desire
141 fertility preservation^(6,7). Reported conservative strategies include expectant management,
142 methotrexate administration, uterine artery embolization, and delayed hysterectomy⁽⁶⁾.

143 The role of methotrexate in term PAS remains controversial. As placental trophoblastic
144 proliferation is minimal at term, some authors question its efficacy⁽⁶⁾. However, selected case
145 series have demonstrated successful outcomes with adjunctive methotrexate therapy⁽⁷⁾. In our
146 patient, a single dose was administered following multidisciplinary discussion, and
147 spontaneous vaginal expulsion of the placenta occurred on postoperative day three without
148 hemorrhagic or septic complications.

149 The favorable outcome in this case can be attributed to several factors: minimal
150 intraoperative blood loss (approximately 800 ml), absence of coagulopathy, maintained
151 hemodynamic stability, and availability of tertiary care monitoring. Importantly, conservative
152 management should only be undertaken in centers equipped to manage delayed hemorrhage
153 or sepsis, as secondary postpartum hemorrhage remains a significant risk^(6,7).

154 **Clinical Implications**

155 This case reinforces several important clinical considerations:

- 156 1. PAS can occur even in the absence of traditional risk factors.
- 157 2. Unregistered pregnancies increase the likelihood of missed antenatal diagnosis.
- 158 3. Intraoperative recognition and avoidance of forceful placental removal are critical.
- 159 4. Conservative management may be a safe and fertility-preserving option in selected
- 160 stable patients.
- 161 5. Multidisciplinary care and close postoperative surveillance are essential for favorable
- 162 outcomes ⁽⁹⁾.

163 **Limitations**

164 The diagnosis in this case was based on intraoperative findings and postoperative imaging.
165 Histopathological confirmation was not available, as hysterectomy was avoided. However,
166 the clinical and radiological findings were strongly suggestive of placenta accreta spectrum.

167 **OBSTETRIC MANAGEMENT**

168 Management of placenta accreta spectrum (PAS) depends on timing of diagnosis, depth of
169 invasion, hemodynamic status, and available institutional resources. International guidelines
170 recommend planned cesarean hysterectomy with the placenta left in situ as the standard
171 approach in confirmed cases, particularly when invasive disease is suspected ^(1,6). This
172 strategy reduces the risk of massive hemorrhage associated with attempted placental removal.

173 **Emergency Context**

174 In the present case, the patient presented as an obstetric emergency with severe preeclampsia
175 and acute fetal distress, necessitating immediate delivery. Due to the urgency, comprehensive
176 preoperative placental mapping was not feasible. Following delivery of a live neonate, failure
177 of placental separation raised suspicion of PAS.

178 At this stage, the surgical team faced a critical intraoperative decision between emergency
179 hysterectomy and conservative fertility-preserving management.

180 **Intraoperative Risk Assessment**

181 Several factors supported a conservative approach:

- 182 • Absence of torrential hemorrhage
- 183 • Estimated blood loss approximately 800 ml
- 184 • Hemodynamic stability
- 185 • Adequate uterine tone
- 186 • Primigravida status
- 187 • Desire for future fertility
- 188 • Availability of senior obstetric consultants

189 Emergency hysterectomy in unexpected PAS cases is associated with increased maternal
190 morbidity, including massive transfusion, adjacent organ injury, and long-term reproductive
191 loss ^(2,9). Given the patient's stability and institutional capacity for close monitoring,
192 conservative management was elected.

193 The umbilical cord was ligated near placental insertion and cut. The placenta was left in situ,
194 and the uterine incision was closed after ensuring meticulous hemostasis. One unit of packed
195 red blood cells was transfused.

196 Leaving the placenta in situ is an accepted conservative strategy in carefully selected
197 hemodynamically stable patients managed in tertiary centers^(6,7).

198 **Postoperative Surveillance**

199 Conservative management carries risks of:

- 200 • Secondary postpartum hemorrhage
- 201 • Sepsis
- 202 • Delayed hysterectomy

203 Therefore, structured monitoring was implemented, including serial complete blood counts
204 and inflammatory markers. The patient remained afebrile and hemodynamically stable, and
205 ICU admission was not required.

206 **Role of Methotrexate**

207 The role of methotrexate (MTX) in conservative PAS management remains controversial.
208 MTX is a folate antagonist that inhibits rapidly dividing trophoblastic tissue and is commonly
209 used in ectopic pregnancy. Its proposed role in PAS is to accelerate placental involution when
210 the placenta is left in situ (6,7).

211 However, at term, trophoblastic proliferation is minimal, and placental tissue consists largely
212 of differentiated cells. Consequently, several authors have questioned the biological rationale
213 and effectiveness of MTX in term PAS (5,6,14). FIGO guidelines do not recommend routine
214 MTX use due to insufficient high-quality evidence (6).

215 Despite this, case reports and small series have described successful conservative outcomes
216 with adjunctive MTX therapy (7,13,15). Some authors suggest it may facilitate earlier
217 placental necrosis and expulsion, although robust comparative studies are lacking.

218 In the present case, postoperative imaging suggested persistent invasive placental tissue.
219 After multidisciplinary discussion and counseling, a single dose of MTX was administered,
220 with careful hematological monitoring.

221 On postoperative day three, the patient spontaneously expelled the placenta vaginally in toto
222 without significant hemorrhage or septic morbidity. While definitive causality cannot be
223 established, early placental expulsion suggests a possible adjunctive role.

224 Given the current evidence, MTX should not be routinely administered in all conservatively
225 managed PAS cases but may be considered selectively in stable patients managed in tertiary
226 care centers with close surveillance.

227

228 CONCLUSION

229 Placenta accreta spectrum (PAS) is classically associated with prior uterine surgery and
230 placenta previa; however, it may rarely occur in primigravida patients with unscarred uteri
231 and no identifiable risk factors. Such atypical presentations reduce antenatal clinical
232 suspicion and increase the likelihood of unexpected intraoperative diagnosis, particularly in
233 unregistered pregnancies with limited placental evaluation.

234 This case underscores the importance of intraoperative vigilance and avoidance of forceful
235 placental removal when abnormal adherence is suspected. Prompt recognition and judicious
236 decision-making are critical to preventing catastrophic hemorrhage.

237 Although planned cesarean hysterectomy remains the recommended standard of care for PAS
238 ^(1,6), conservative management with the placenta left in situ may be considered in carefully
239 selected, hemodynamically stable patients who desire fertility preservation and are managed
240 in adequately equipped tertiary centers. The role of adjunctive methotrexate remains
241 controversial and should be individualized based on clinical context.

242 This report highlights that PAS can occur even in the absence of classical risk factors and
243 demonstrates that fertility-preserving management may be feasible in selected cases with
244 structured postoperative surveillance. Further research is required to better define selection
245 criteria and long-term reproductive outcomes in conservatively managed PAS, particularly in
246 unscarred uteri.

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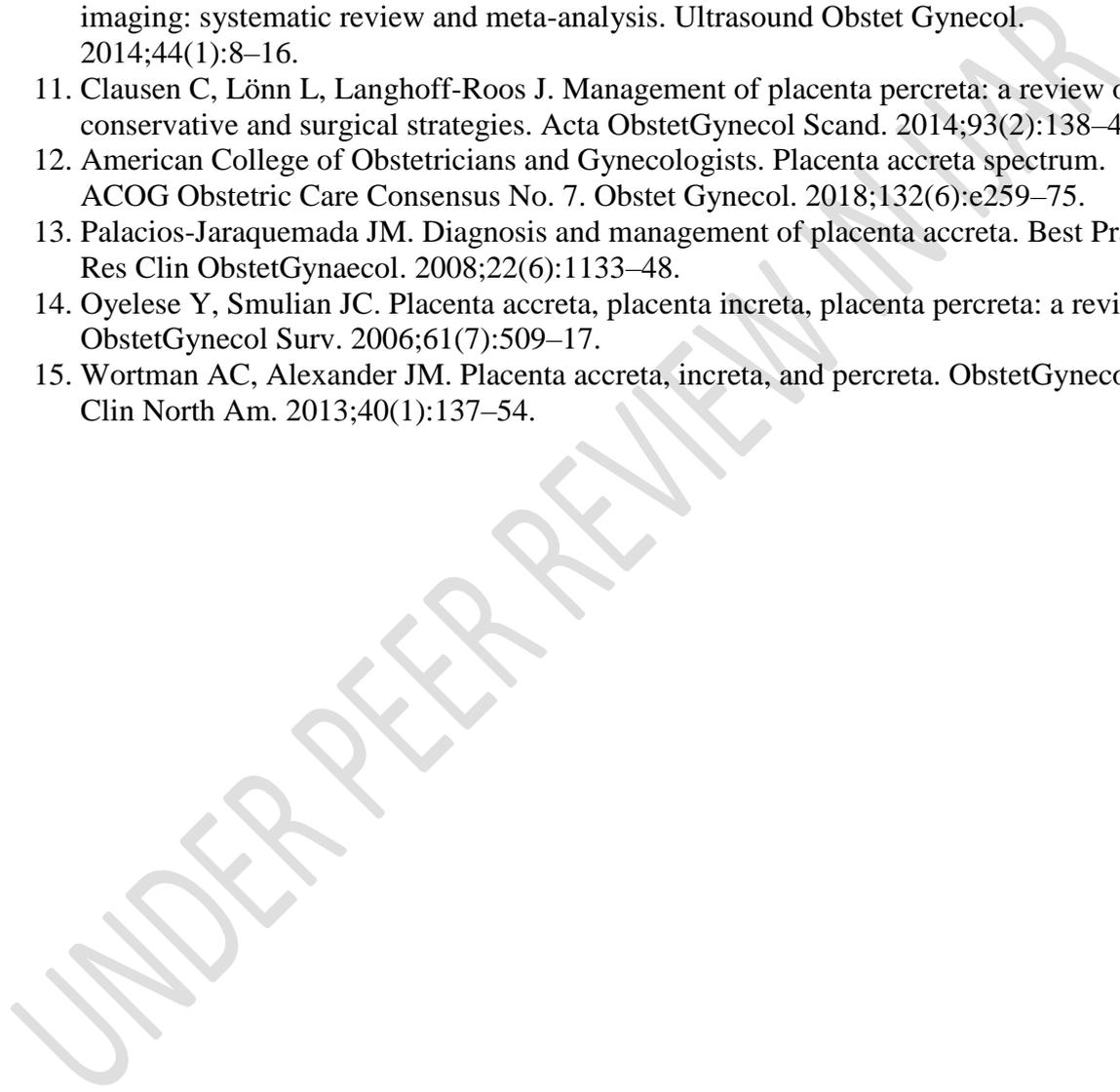
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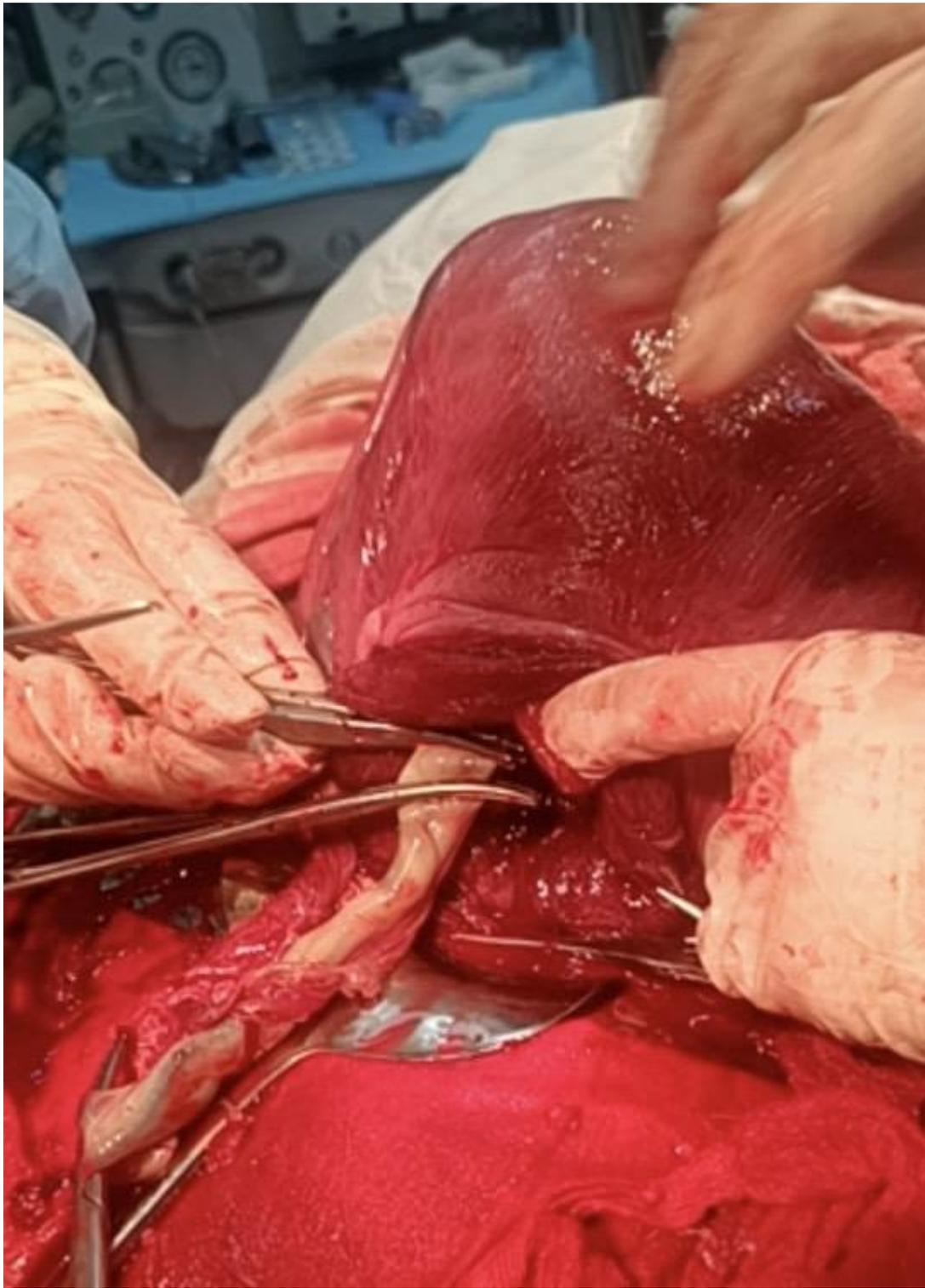




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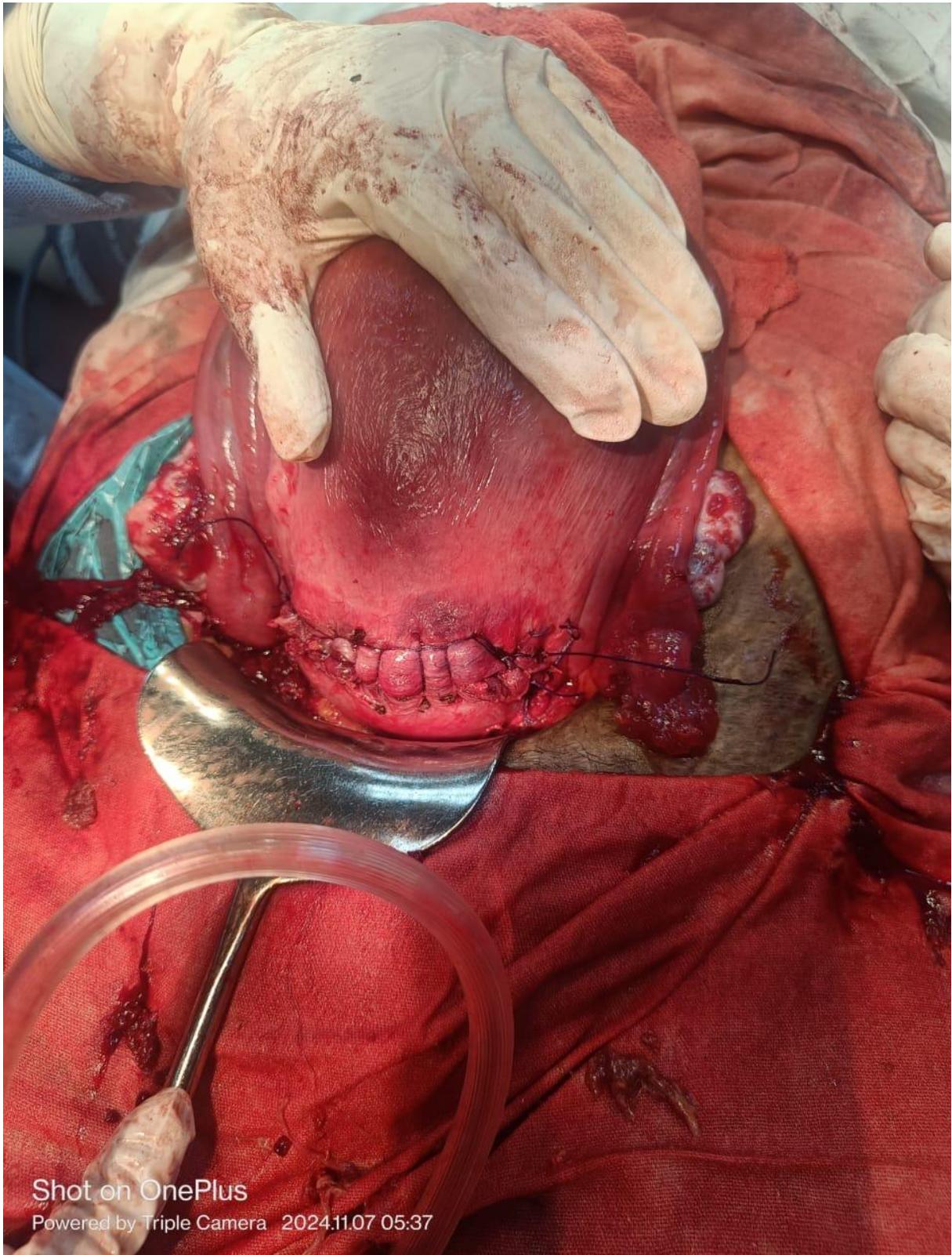


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