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Combined caesarean section and open reduction internal fixation for the treatment of an acetabular fracture in late pregnancy

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Lesson

In this case, we opted for dual surgery combining caesarean section and internal fixation of acetabular fracture in late pregnancy, which allowed safe foetal delivery, fracture repair and early ambulation of the mother. In similar cases, this method could be potentially considered in the armamentarium of treatment options, aiming to facilitating prompt motherhood input and early hospital discharge, as well as minimising the risk of post-traumatic arthritis of the hip.

Keywords

acetabular fracture, polytrauma, pregnancy

Introduction

We report the first case, to our knowledge, where an operative treatment of an acetabular fracture has been performed following caesarean section in the same setting in a 34-year-old with a pregnancy at 34 weeks. Although internal fixation of acetabular fractures has been reported during pregnancy, most studies report cases in the first and second trimester.^{1–4} When an acetabular fracture occurred at 32 weeks, open reduction and internal fixation was performed four days post-delivery following spontaneous labour.¹ We report the first case, to our knowledge, where an operative treatment of an acetabular fracture has been performed following caesarean section in the same setting.

Case presentation

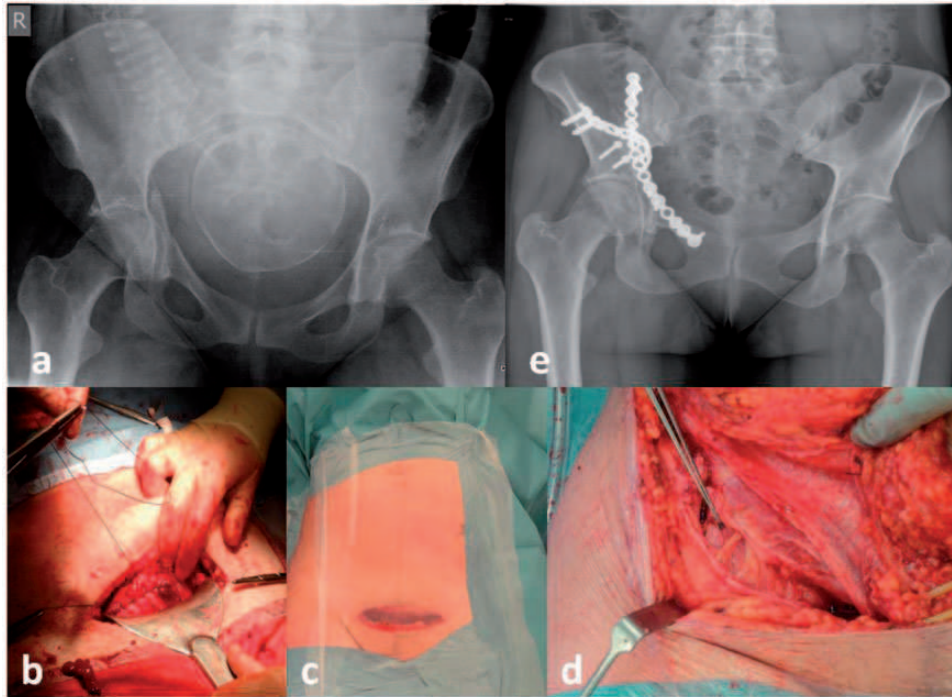
>In this case, a 34-year-old primigravida was admitted to a local district accident and emergency department following hip pain from a fall on ice with a pregnancy at 34 weeks. A pelvic X-ray revealed fracture of the right acetabulum (Figure 1(a)). No other injuries were sustained. Foetal heart sounds were normal. The patient was referred to our tertiary

referral centre due to the acetabular fracture. Under radiological advice a CT scan was performed, which showed a two-column acetabular fracture fulfilling the indications for operative management due to the displacement of the columns and the medial wall plate of the acetabulum. Timing of surgery was then discussed taking into consideration the limitations of pregnancy. A multidisciplinary meeting and discussion with the patient was undertaken and it was decided that surgery combining caesarean section and open reduction and internal fixation of the acetabular fracture would be performed at the same setting, in an effort to safely deliver the foetus, allow early mobilisation of the mother and restore hip joint congruity minimising the risk of developing post-traumatic arthritis. The alternative for a non-operative management would have included skeletal traction with a femoral pin and bed rest for 8–12 weeks, but with unpredictable results in terms of the longevity of the hip joint. Delayed surgery was also considered after delivery, but such an approach would have made reconstruction of the acetabulum more difficult due to the anticipated callous formation. Moreover, the exposure and caring of the mother with her newborn child would have been interrupted for several days.

Management

Five days from the original injury, under general anaesthetic, the caesarean section was carried out under a transversus abdominis plane block at 34 + 6 weeks, which led to the birth of a 2.8 kg male baby. The uterus was sutured, but the skin was left open (Figure 1(b) and (c)) and reconstruction of the acetabular fracture was continued through an ilioinguinal extension of the initial incision (Figure 1(d)). Post-operatively, the patient was admitted to the High

Figure 1. Images of the patient: (a) AP pelvic radiograph on admission. (b) Intraoperatively, after completion of the caesarean section, closure was performed in layers, (c) but the skin was left open and covered to proceed with the reconstruction of the acetabular fracture. (d) The phannestial incision was extended exposing the first two windows of the ilioinguinal approach prior to fixation of the acetabulum. (e) AP pelvic radiograph nine months post-operatively.



Dependency Unit and was discharged home 16 days later with minor lateral femoral cutaneous nerve palsy. The newborn was admitted to the Neonatal Unit with jaundice and hyperbilirubinaemia but had no long-term complications. The patient was able to partially weight bear with good range of motion at the hip immediately post-operatively and after eight weeks full weight bearing was allowed. A short course of physiotherapy facilitated full return to function. Radiological examination at nine months revealed a congruent hip joint (Figure 1(e)).

Discussion

This is the first time that an acetabular fracture fixation following caesarean section in the same setting has been reported in the literature. In previous reports, fixation has been carried out prior to delivery^{2,3} or shortly following spontaneous vaginal delivery despite a planned procedure 2.5 weeks later.¹ The late pregnancy gestation in this case meant surgery was not required prior to delivery. Dual surgery allowed combination of safe foetal delivery with minimal risk and distress and acetabulum repair to

decrease the risk of post-traumatic hip arthritis. Early ambulation of the mother post-operatively also facilitated prompt motherhood input and early hospital discharge.

Declarations

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Ethics approval: Written informed consent for publication was obtained from the patient.

Guarantor: PVG.

Contributorship: AMC, EF, RD and MP were involved in collecting the clinical information and writing the manuscript. PVG had the concept of the report and was involved in writing the manuscript.

Provenance: Not commissioned; peer-reviewed by Kausik Das.

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