Unexpected outcome (positive or negative) including adverse drug reactions

Accidental delivery of a baby during a caesarean section through a vaginal incision (a laparoelytrotomy)

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Summary

A 27-year-old woman was admitted at 39 weeks' gestation for induction of labour for gestational diabetes. During artificial rupture of her membranes, cord prolapse occurred necessitating an emergency caesarean section. At closure, the incision, instead of being in the lower uterine segment, was found to be in the vagina about 1.5 cm below the anterior lip of the cervix. This was closed routinely, both mother and the baby made an uneventful recovery and at a 6 week postnatal check-up the vaginal wall was completely healed and normal.

BACKGROUND

A laparoelytrotomy is the delivery of a baby through a vaginal incision. In the 19th century the mortality rate after traditional caesarean sections through a lower uterine incision approached 100%, mostly due to peritonitis,¹ and laparoelytrotomies were introduced to allow delivery through an extra peritoneal approach to try to reduce maternal mortality.² As medicine advanced and the rates of sepsis fell, laparoelytrotomies eventually fell out of favour. In modern obstetrics today, the standard incision during caesarean section is a transverse lower uterine segment incision. A laparoelytrotomy that occurs today is almost always accidental and is usually only identified after the delivery of the baby when it is realised that the incision has been inadvertently made too low and below the cervix. Only a handful of case reports exist in the current literature about patients who have undergone laparoelytrotomies and all of these cases have occurred accidentally in patients in advanced stages of labour, during emergency caesarean sections, usually after failure of instrumental delivery.³ We report the first case of an inadvertent laparoelytrotomy in a non-labouring patient during an emergency caesarean section for cord prolapse.

CASE PRESENTATION

A 27-year-old woman with three normal previous deliveries was admitted at 39 weeks' gestation for induction of labour for gestational diabetes. A vaginal examination revealed the cervix to be dilated to only 3 cm with a high presenting fetal head. Controlled artificial rupture of the membranes was performed but during the procedure cord prolapse occurred. She promptly underwent an emergency caesarean section under general anaesthesia. Some difficulty was experienced in delivering the head of the baby but with the help of a pair of Neville Barnes forceps, the delivery of a healthy female baby weighing 3.365 kg was achieved. At closure, the incision, instead of being in the lower uterine segment, was found to be in the vagina about 1.5 cm below the anterior lip of the cervix (figure 1). This

was closed routinely and the estimated blood loss was around 500 ml in total.

OUTCOME AND FOLLOW-UP

Both mother and the baby made an uneventful recovery and were discharged home on the 3rd day. At a 6 week postnatal check up clinic, the cervix and anterior vaginal wall were completely healed and normal.

DISCUSSION

An inadvertent laparoelytrotomy usually happens during a caesarean section in patients with advanced cervical dilatation where the head of the baby is deeply engaged. This is because the cervix is now well above the head of the baby and an incision can be easily made in the anterior vaginal wall. However, this poses little danger to the mother or baby and, indeed, a laparoelytrotomy can be an alternate and appropriate surgical technique for the delivery of a baby in these patients. It is performed electively by displacing the bladder caudally, exposing 3.8–4 cm of the anterior vaginal wall and making a longitudinal incision in the vaginal wall. The incision is longitudinal to avoid injury to the ureters (figure 2). The wall of the vagina is easily recognised given its ballooned out and shiny appearance. This is not a commonly performed procedure but, in fact, compared to more commonly used techniques to deliver a deeply engaged head in the second stage of labour, a laparoelytrotomy seems to have much fewer complications. For example, the conventional technique of pushing the head up vaginally to assist with delivery can cause direct fetal trauma and also increases the likelihood of the lower uterine segment incision being extended, which can result in major obstetric haemorrhage and injury to the lower urinary tract.^{4 5 6} The breach extraction technique, where the delivery is facilitated through a more superior vertical incision in the uterus, can also pose significant risk to the mother and fetus. It is of note that subsequent deliveries in patients who have undergone a laparoelytrotomy should be vaginally as there has been no incision made in their uteruses.

Figure 1 Schematic diagram of an inadvertent incision in the vagina in a non-labouring patient (figure courtesy of D. Middleton. Medical Illustration Department, James Paget Hospital).

However, in a non-labouring patient, such as in this case, an inadvertent laparoelytrotomy can have serious maternal and fetal consequences and must be avoided. The aetiology for the inadvertent vaginal incision in this case was probably multifactorial. The patient was multiparous and had a moderate degree of laxity of her utero-vaginal compartment in turn due to lax utero-sacral ligaments. Multiparity, even in a non-pregnant patient, causes the vagina to move superiorly from its normal position. In pregnancy it rises further up due to the ascending gravid uterus. In this case, the surgeon was not aware that the incision was in the vaginal wall and

persistent attempts to deliver the baby along with the use of forceps eventually did dilate the cervix and allowed the delivery of the baby albeit with difficulty. Although no harm came to the mother or baby in this case, there is always a potential risk, during an inadvertent laparoelytrotomy in a non-labouring patient, of causing extensive uterine and cervical tears and trauma to the baby. It can be avoided, first by anticipating such a problem in a multiparous woman and second, during surgery, by keeping the margins of the uterine incision within 2–3 cm of the utero-vesical folds.

Figure 2 Schematic diagram of an elective laparoelytrotomy incision (figure courtesy of D. Middleton. Medical Illustration Department, James Paget Hospital)

Learning points

- ▶ A laparoelytrotomy is the delivery of a baby through a vaginal incision.
- ▶ It is usually inadvertent but can also be an alternate and appropriate surgical technique in patients in advanced stages of labour where the head of the baby is deeply engaged.
- ▶ It can be dangerous if it occurs in a non-labouring patient.

Competing interests None.

Patient consent Obtained.

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