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(CASE REPORT)

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# Incidental posterior uterine incision for caesarean section following uterine torsion: A case report

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## Abstract

Uterine torsion in a term pregnancy is an exceedingly rare, potentially hazardous occurrence with high risk of perinatal mortality and morbidity. Diagnosis is almost always intraoperative during caesarean section and it is usually unexpected.

We present a very unusual case of 180° uterine torsion noticed intraoperatively during an elective caesarean section indicated by recurrent breech presentation at term in a background of previous caesarean section. Intraoperatively, caesarean section was complicated by cardiac arrest from high spinal anaesthesia, while delivery was effected through a posterior transverse almost mid-segment incision after attempt at uterine detorsion was not feasible. The patient was revived and a live female baby that weighed 2.7kg with APGAR scores of 5 and 10 in the first and fifth minutes respectively was extracted. Her post operative condition was uneventful and she was discharged on the 3<sup>rd</sup> post operative day.

Keyword: Torsion; Uterus; Posterior Incision; Caesarean Section

## 1. Introduction

While it is a common finding to notice mild (less than 45°) dextro or levo-rotation of the gravid uterus at term, it is very rare to find uterine torsion defined as the rotation of the uterus more than 45°1-3. Dextrorotation of the uterus is more common than levo-rotation and it is present in two-third of the cases<sup>3</sup>.

It was reported in literature that Virchow<sup>4</sup> was the first to report a case of uterine torsion in a post-mortem human examination in 1863, while Labbe<sup>5</sup> described this pathology for the first time in a living woman in1876.

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Uterine torsion can be associated with high risk of perinatal mortality and morbidity<sup>6,7</sup> due mainly to reduced uteroplacental perfusion. Acute presentation may be in form of pain, shock, intestinal obstruction, and obstructed labour, whereas up to 6% of cases may be asymptomatic<sup>8</sup>.

The diagnosis is almost always made incidentally intraoperatively during caesarean section for other obstetric indications<sup>6,8,9</sup>. Most cases of uterine torsion have identifiable risk factors including coexisting uterine fibroids, fetal malpresentations or anomalies, congenital uterine malformations especially bicornuate uterus, ovarian masses and pelvic adhesions<sup>2,8-12</sup>, whereas as much as 30.5% of cases have no identifiable cause<sup>8</sup>.

Laparotomy and correction of the uterine torsion is the only hope for a successful maternal and fetal outcome. At term, repositioning of the uterus followed by caesarean section is the treatment of choice. Posterior uterine incision may be inevitable when attempt at repositioning the uterine fails as in the index case.

# 2. Case History

Mrs. US was a booked 33-year-old  $G_2P_1$  (One Alive) civil servant who resides in Enugu. She booked for antenatal care at Enugu State University Teaching Hospital (ESUTH), Parklane Enugu at 21 weeks gestational age and had essentially uneventful antenatal care. Her booking parameters were essentially normal and included a booking weight of 48kg, height =1.69m, and BP was 110/60mmHg. Her serology results (RVS, HBsAg, HCV) as well as her Venereal Disease Research Laboratory test were non-reactive. Her booking PCV=31%, Blood grp=AB+ and Hb-genotype =AS. Pregnancy progressed uneventfully and she made a total of 6 antenatal visits. Serial ultrasound scan showed no obvious anomaly except for the fetus that remained in persistent breech presentation till term. There was no co-existing uterine fibroid or other pelvic masses.

Two years earlier, she had elective caesarean section due to term breech presentation at a private hospital in Abuja. The surgery was uneventful and the outcome was a live male baby that weighed 2.7kg. She was diagnosed with asthma a year earlier and was placed on tabs aminophylline and salbutamol. She never had any asthmatic attack in the course of the index pregnancy and had stopped taking her medications when she became pregnant.

She was booked for elective repeat caesarean section at 38 weeks gestational age due to previous caesarean section and breech presentation. During her last visit a week before her operation day she had complained of dull persistent colicky lower abdominal pain that radiated to the thighs but there was no change in her bowel or urinary habits and her fetal and maternal vital signs were satisfactory.

Intraoperatively, as soon as the patient received spinal anaesthesia her vital signs crashed; blood pressure= 50/20mmHg, Pulse rate =144/min, SPO<sub>2</sub>=? and she immediately became unresponsive. Recognizing this emergency and while the anaesthetists were battling to revive the patient, attempt was made to speed up the delivery so as to further improve circulation. Repeat Pfannenstiel incision was used to penetrate the peritoneal cavity only to realize that the normal uterine anatomy was distorted even when there were no pelvic adhesions or masses. The uterus had rotated 180° in the clockwise direction and trapping part of the small intestines anteriorly. The uterovesical peritoneum and the bladder were not visible (Figure 1). Attempted repositioning was difficult as there was little room for manipulations through a Pfannenstiel incision. A posterior almost mid-segment uterine incision was immediately made to effect delivery. The uterus was later repositioned after the surgery (Figure 2).Other key intraoperative findings include-

- Dark discolouration of the blood (reduced perfusion due to high spinal anaesthesia).
- 180° clockwise torsion of the uterus with entrapment of the gut within the round ligament. (Figure 1).
- Mildly asphyxiated female baby delivered by breech extraction with APGAR Scores of 5 and 10 in the first and fifth minutes respectively and weighing 2.7kg.
- Anterior mid-uterine placenta.
- Clear anterior lower uterine segment
- Healthy looking fallopian tubes and ovaries. EBL=650ml.

Patient was revived and her post operative care was uneventful and she was discharged on the 3<sup>rd</sup> post operative day in satisfactory condition.



Arrow 'A' shows trapped small intestine while arrow 'B' showed the broad ligament.

Figure 1 The picture of the uterus with posterior transverse incision in torsion state



Arrow 'A' showed the freed small intestine while arrow 'B' represents the scar tissue point of previous caesarean section.



## 3. Discussion

The case presented above illustrated a very uncommon combination of two fatal obstetric emergencies -high spinal anaesthesia and uterine torsion in a booked 33-year-old secundigravida during an elective repeat caesarean section indicated by recurrent breech presentation.

Rotation of the gravid less than 45<sup>o</sup> is a normal finding during caesarean section and it is attributed to the positioning of the rectosigmoid colon at the posterior-lateral aspect of the uterus<sup>13</sup>. Twisting of a gravid uterus greater 45<sup>o</sup> is such a rare obstetric emergency that most obstetricians and gynaecologists may encounter this condition only once in their life time<sup>14</sup>. This condition has been observed in all age groups of the reproductive period, all parity groups, and at all stages of pregnancy<sup>14</sup>. Our patient was 33 years old and in her second ongoing pregnancy at term. This is the second reported case of uterine torsion during pregnancy from our centre. The first was the case of unavoidable posterior lower uterine segment caesarean section caused by huge uterine fibroid reported by Onyekpa et al<sup>11</sup>in 2002.

Whereas the exact aetiology of uterine torsion remains unknown, risk factors associated with increased uterine torsion have been reported to include presence of pelvic masses like uterine fibroids<sup>2,9-11,15</sup>, blunt abdominal trauma<sup>16</sup>, malpresentation mostly breech<sup>6,13,15</sup>, uterine malformations like didelphys<sup>17</sup>, external cephalic version (ECV)<sup>18</sup>, pendulous abdomen with lax musculature among others. More than 30% of cases have no identifiable risk factors.<sup>8</sup> Our patient had malpresentation specifically recurrent breech presentation at term having had the same presentation in her first pregnancy. There were no other identifiable risk factors in our patient. Hoffmann et al<sup>13</sup> reported a case of uterine torsion in a gravida-4 para-2 woman that had malpresentations in all her 3 previous pregnancies (transverse lie in her first pregnancy, breech in her second, and presented with breech and uterine torsion in the reported case). Many of

these risk factors are more frequently encountered in obstetric practice without uterine torsion suggesting that other factors extrinsic or intrinsic may be responsible for uterine torsion<sup>13</sup>.

There are no specific signs or symptoms pathognomonic of uterine torsion. When present, the signs and symptoms are mostly non-specific and may include abdominal pain, nausea, vomiting, persistent tachycardia, and rarely shock.<sup>3,6,8,19.</sup> A good percentage of cases are asymptomatic just as in our present case. Our patient complained of dull lower abdominal pain that radiated to the thighs a week prior to her delivery but there were no altered feto-maternal vital signs to raise any suspicion especially with normal ultrasound findings. This is a normal finding in many pregnancies at term. However, Guie et al<sup>3</sup>, and Kremer et al<sup>20</sup>, in their respective studies suggested that a suspicion of uterine torsion may be raised in situations of '*placenta migrans*' phenomenon, where serial ultrasound scanning showed changing placental localizations from left to the right and vice versa, or in the presence of an abnormal positioning of the ovarian vessels passing in front of the lower uterine segment<sup>3</sup>.

Our diagnosis of posterior uterine incision was confirmed after the delivery of the fetus and uterine repair even though the suspicion was raised intraoperatively following distorted pelvic anatomy and non-visualization of the uterovesical peritoneum. Upon laparotomy, posterior transverse almost upper segment uterine incision was unavoidable because the lower segment was inaccessible and the Pfannenstiel incision restricted every attempt at repositioning the uterus. This emergency situation was compounded by the high spinal anaesthetic complication which necessitated extra speedy delivery to save the baby and improve maternal circulation and survival.

Many studies agreed that posterior hysterotomy may be unavoidable in cases of uterine torsion when detorsion is not feasible<sup>2,6,8-13,15</sup>. However, the implication of a posterior uterine incision in future pregnancy especially in cases with previous anterior caesarean section remained unclear<sup>13</sup>. Megembe et al<sup>21</sup>, reported that posterior uterine incision is associated with the risk of damage to the uterine vessels and the ureters, weaker scar healing, and increased possibility of uterine rupture in subsequent pregnancies<sup>21</sup>. Perhaps, this may explain why Ahmed et al<sup>6</sup>, decided on permanent sterilization and performed bilateral tubal ligation after obtaining intraoperative consent for his patient with a similar condition. Some other authors had recommended elective repeat caesarean section at early term to prevent uterine rupture<sup>13,21</sup>. We shared this opinion and recommended close follow up and early delivery for our patient in her next pregnancy. Whether or not a posterior uterine incision predisposes to increased risks of adhesion formation and or uterine dehiscence or rupture is still largely unknown. There is paucity of cases on this subject to necessitate a systematic review. Just like some other studies<sup>13</sup>, we also noticed slight increase in uterine bleeding from the incision site as seen in figure 1 above. This may be partly because the incision was slightly above the lower uterine segment, having thicker musculature compared with the usual thinner anterior lower uterine segment.

The prognosis of uterine torsion is often good for the mother but there is a risk of perinatal mortality. Mortality rates between 12-18% has been reported<sup>6,7,15</sup>. This depends on the severity of symptoms, intraoperative ischemic signs, and the duration of torsion. Studies showed that uterine torsion greater than 180<sup>o</sup> usually has poor perinatal outcome<sup>1,3</sup>. This is because of increased risk of abruptio placenta, fetal bradycardia or fetal death, as well as irreversible ischaemic complications that can lead to hysterectomy<sup>1</sup>, maternal neurogenic and hypovolemic shock that can lead to maternal death<sup>3</sup>. It was difficult to fathom when torsion occurred in our index case as there were no obvious unusual signs or symptoms. The uterus and the adnexa were essentially healthy-looking even when a loop of the small intestines (figure 1) was loosely entrapped by the twisting uterus. Again, the transient low Apgar score of 5 in the first minute of life was difficult to be attributed to the uterine torsion alone, giving the anaesthetic shock that greeted the spinal anaesthesia. Our conclusion is that the transient low APGAR score may be purely anaesthesia induced.

## 4. Conclusion

Despite being a very rare occurrence, a missed opportunity to diagnose uterine torsion can lead to dire consequences for both the mother and especially the fetus. A high index of suspicion must be maintained especially in cases with persistent breech and other malpresentations, coexisting huge fibroids, congenital fetal or uterine malformations, and in multigravidas with pendulous uterus with or without haemodynamic instability. Serial routine ultrasound scanning can be very helpful in raising our suspicions. Posterior uterine incision is lifesaving and is advocated when attempt at detorsion fails.

#### **Compliance with ethical standards**

#### Disclosure of conflict of interest

There is no conflict of interest to disclose.

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