LOCKED TWINS

(A Case Report)

by

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Locking of twins is a very rare complication during labour. The incidence of locked twins is said to be 1:90,000 deliveries i.e. once in about every 1000 twin deliveries. This statement was made by Von Braun of Vienna, but in view of the number of cases recorded during the last ten years, it seems that the condition is not quite so uncommon. It is indeed surprising, that locking does not occur more often, and most of the busy obstetricians do not come across a single case during their many years practice. Munro Kerr saw only one case in over 44 years. Wright (1942) appears to be the only obstetrician to have treated 3 cases personally and that too within a period of 6 years. Lawrence (1942) also reported 3 cases of locked twins. So far about 168 cases have been reported in the literature.

The complication is not recognised until late in the second stage. The abnormal sequence of events are catastrophic and tax the ingenuity of even an experienced obstetrician. Although the results with respect to the mother are good, they are devastating for the foetus, and carry a high perinatal mortality rate. For this reason collective review of the literature has been undertaken and because of its infrequency an additional case is presented.

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CASE REPORT

Mrs. K. K. S., aged 22 years, was transferred to B.Y.L. Nair Charitable Hospital from a peripheral maternity hospital, for prolonged labour. On admission the patient was getting strong pains. The membranes had ruptured at 1:30 p.m. The cervix was fully dilated from 5:30 p.m., and in spite of good uterine contractions the patient had not delivered till 10-30 p.m.

She was a 4th gravida and 2nd para, she had two full-term normal deliveries. There was no history of prolonged labour or operative interference in the past deliveries. The patient gave a history of one abortion at 4 months. The last delivery was 3 years ago and the last abortion was one and half years ago. There was no past history or family history of twin delivery.

On examination, her general condition was good. The uterus was unduly enlarged and multiple foetal parts were felt. From the clinical examination, diagnosis of multiple pregnancy was made. The first baby was presenting by the vertex. The head of the first baby was deeply engaged. The second foetal head was felt at the level of the symphysis pubis. It was fixed and not freely ballotable. Both foetal heart sounds were regular.

The cervix was fully dilated. The membranes were absent. The presenting part (vertex of the first baby) was at the level of the ischial spines. The position was left occipitoanterior. The second foetal head was very high and could not be felt per vaginam. The pelvis was adequate.

A provisional diagnosis of prolonged labour due to the locking of two fore-coming heads was made. Urgent x-ray abdomen was taken which confirmed the diagnosis (Fig. 1).

The patient was reexamined under general anaesthesia. The first foetal head was felt in the pelvic cavity, and the neck of the first baby was unduly stretched. The second head was also trying to engage simultaneously and was felt just by the side of the neck of the first
baby. Since the patient was already a case of prolonged labour, due to the entanglement of two fore-coming heads, it was decided to terminate the labour by forceps delivery. The head of the second baby was disimpacted and pushed up. The disimpaction was very easy. First baby was delivered by forceps, using long forceps. The application of the blades, and the extraction was very easy. After the birth of the first baby, vaginal examination was repeated to find out the station of the second foetal head. It was in occipitoposterior position and one hand was also felt by the side of the head. The hand was repositioned, and the second foetal head was also delivered by forceps as face to pubis delivery. The delivery was very easy. Since the patient was under deep general anaesthesia, manual removal of the placenta was done. The placenta was single and normal. Exploration of the uterine cavity was done. It was intact and there was no cervical or vaginal tear.

First baby cried after five minutes. Second baby cried immediately. First baby was female and weighed 2.2 kg. Second baby was male and weighed 2.1 kg. First baby had swelling over the face and neck which subsided spontaneously after 48 hours. Puerperium was uneventful. Both babies and mother were discharged on seventh day in good condition.

Discussion

Nissen reviewed the world literature from 1882 to April 1957 and reported 69 cases of locked twins. He defined the terms collision, impaction, compaction and interlocking in cases of entanglement of twin foetuses. He also divided these cases into four groups. (Baby A, refers to the infant with the lowest foetal pole).

Group I Baby A breech Baby B vertex.

This was the commonest type in his series—45 cases out of 213 total cases. 50 per cent of the infants were lost and of these 80 per cent were baby A. Decapitation or craniotomy accounted for the foetal deaths. There were no rupture uteri and not a single maternal death.

Group II Baby A vertex Baby B vertex.

Seventeen cases have been reported so far (1938). Head B was invariably impacted or compacted between the chin and the shoulder of baby A at or below the pelvic inlet.

Out of 17 cases, 16 were primigravidas and one was a multipara. In the present case report the patient was 4th gravida. Details of these 17 cases have been given in the following Table:

Ten infants were lost, 6 of which were baby A. Foetal destruction was necessary to effect delivery in 3 cases. There were no maternal deaths or rupture uteri.

Group III Baby A vertex Baby B transverse.

There were five cases in this group. In all, either a prolapsed arm or shoulder of baby B prevented descent of head A.

Group IV Baby A breech Baby B breech.

This is the least common entanglement, having been reported only twice. Both were nulliparous, the first case double knee presentation. Both infants were still born. In the second case the after-coming head A collided with a flayed leg of B. Infant A died, but B survived.

Etiological considerations:

(1) Age and Parity: In young primigravidae locking of twins is particularly common in Nissen's series; out of 69 patients 77 per cent were under the age of 30 years and 72 per cent were primigravidas. The basic tone of the uterus is probably higher in the first pregnancy, thereby manifesting strong contractions during labour. The resultant expulsive force, particularly if sustained may drive two closely opposed foetal poles along parallel axis into the pelvic inlet together.

(2) Amniotic Fluid:

Premature rupture of second sac was
<table>
<thead>
<tr>
<th>No.</th>
<th>Case Description</th>
<th>Age</th>
<th>Para</th>
<th>Type</th>
<th>Mother</th>
<th>Infants</th>
<th>Weights</th>
<th>Treatment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Boerma (1907)</td>
<td>27</td>
<td>0</td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-1 &amp; W</td>
<td>2600</td>
<td>B-disengaged</td>
<td>hypotonic uterus</td>
</tr>
<tr>
<td>2.</td>
<td>Vallois (1909)</td>
<td>27</td>
<td>0</td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-1 &amp; W</td>
<td>2500</td>
<td>B-disengaged</td>
<td>hypotonic uterus</td>
</tr>
<tr>
<td>3.</td>
<td>Vallois (1909)</td>
<td>23</td>
<td>0</td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>1850</td>
<td>B-disengaged</td>
<td>eclamptic convulsion before and after delivery; membranes ruptured artificially</td>
</tr>
<tr>
<td>4.</td>
<td>Commandeur and Eparvier (1923)</td>
<td></td>
<td></td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>2170</td>
<td>A &amp; B-forceps</td>
<td>hypotonic uterus</td>
</tr>
<tr>
<td>5.</td>
<td>Phillips (1926)</td>
<td></td>
<td></td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>2300</td>
<td>A-forceps</td>
<td>oligohydramnios; oligohydramnios sac A &amp; B</td>
</tr>
<tr>
<td>6.</td>
<td>Kittson &amp; Scott &amp; Claye (1934)</td>
<td>29</td>
<td>0</td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>2724</td>
<td>A-decapiation</td>
<td>oligohydramnios sac A &amp; B intact</td>
</tr>
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<td>7.</td>
<td>Coleman (1936)</td>
<td>27</td>
<td>0</td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>2826</td>
<td>B-version &amp; extraction</td>
<td>oligohydramnios</td>
</tr>
<tr>
<td>8.</td>
<td>Coleman (1936)</td>
<td></td>
<td></td>
<td>head A</td>
<td>L &amp; W</td>
<td>B-1 &amp; W</td>
<td>4068</td>
<td>A &amp; B-forceps</td>
<td>birth sac ruptured spontaneously</td>
</tr>
<tr>
<td>9.</td>
<td>Dawson (1936)</td>
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<td></td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>2495</td>
<td>B-forceps</td>
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<tr>
<td>10.</td>
<td>Fetch &amp; Best (1938)</td>
<td>24</td>
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<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>1814</td>
<td>B-disengaged</td>
<td>birth sac ruptured spontaneously</td>
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<tr>
<td>11.</td>
<td>Vagna (1938)</td>
<td>31</td>
<td>0</td>
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<td>L &amp; W</td>
<td>A-s.b.</td>
<td>2700</td>
<td>Caesarean Section</td>
<td>birth sac ruptured spontaneously</td>
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<td>12.</td>
<td>Contardo (1939)</td>
<td>29</td>
<td>1</td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>3200</td>
<td>A-decapiation</td>
<td>birth sac ruptured spontaneously</td>
</tr>
<tr>
<td>13.</td>
<td>Horder (1944)</td>
<td>30</td>
<td>0</td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>3000</td>
<td>B-forceps</td>
<td>birth sac ruptured spontaneously</td>
</tr>
<tr>
<td>14.</td>
<td>Cunningham (1947)</td>
<td>26</td>
<td>0</td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>2298</td>
<td>B-disengaged</td>
<td>birth sac ruptured spontaneously</td>
</tr>
<tr>
<td>15.</td>
<td>Lawrence (1949)</td>
<td>27</td>
<td>0</td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>2900</td>
<td>B-disengaged</td>
<td>birth sac ruptured spontaneously</td>
</tr>
<tr>
<td>16.</td>
<td>Carty (1957)</td>
<td>30</td>
<td>0</td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>3200</td>
<td>A &amp; B-forceps</td>
<td>birth sac ruptured artificially</td>
</tr>
<tr>
<td>17.</td>
<td>Swann (1957)</td>
<td>22</td>
<td></td>
<td>head B</td>
<td>L &amp; W</td>
<td>A-s.b.</td>
<td>1900</td>
<td>A-forceps</td>
<td>birth sac ruptured spontaneously</td>
</tr>
</tbody>
</table>
noted in 33 per cent and oligohydramnios in 23 per cent. In the present case the second sac had ruptured prematurely. One or both these conditions could induce more proximate foetal position.

(3) Deflexion:

Extension of one or both foetal heads, and breech—vertex presentations are prerequisites for chin—chin interlocking. Fundal placentation, abnormally short cords, space filling intrauterine tumours, uterine anomalies and obstructing foetal parts may all impede the descent, thereby initiating deflexion. In the present case the second foetal head was extended.

Foetopelvic disproportion

Small foetuses negotiating very large passages are more likely to collide. The small or widely disproportionate sized infants descending into a roomy pelvis could engage simultaneously and thus become compacted. About 30 per cent of the infants in the series recorded weighed less than 2000 gm.

Management

The key to successful treatment is obviously early recognition. The failure of descent in the presence of effective uterine contractions and adequate pelvis should arouse suspicion. Liberal but judicious use of X-rays, — lateral and anteroposterior films will resolve the issue.

Group I — Baby A Breech — Baby B—vertex

Disengagement of the vertex should be attempted. If this fails continued breech extraction may produce irreversible entanglement and abdominal delivery would be indicated.

Group II Baby A Vertex Baby B Vertex

These are less likely to be compacted because of relative rigidity collision and impaction are more common.

It is recommended that the disengagement of head B be attempted whenever the cervix is sufficiently dilated. If both are dead, destruction of one infant would be preferable to abdominal delivery. In the present case the head B was disimpacted easily and then both were extracted by forceps delivery. In the cases reported so far, 8 cases were delivered by forceps after disimpaction of the head B. In 2 cases destructive operations were carried out. Two cases were delivered as breech after internal podalic version. In 1 case forceps was applied for the head A and B delivered spontaneously. Two cases were delivered by caesarean section.

Dawson (1936) reported a case of 2nd gravida, who failed to progress after 24 hours of labour, in spite of sufficient dilatation of cervix and good uterine contraction. One foetal head could be palpated easily above the pelvic brim, but the second head could not be palpated. Liquor amni was scanty.

X-ray abdomen showed two foetuses presenting as vertex. The head of the second foetus was in collision with the head and the shoulder of the first. He decided to do caesarean section because (1) both foetuses were alive and of good size so that disengagement would have been difficult. (2) liquor was scanty. (3) cervix was not sufficiently dilated. Under general anaesthesia caesarean section was done. The head of the second foetus was pushed through the uterine incision by fundal pressure. The first baby was delivered by breech. The first baby was male weighing 6 pounds and the second was girl weighing 5 pounds and 10 ounces.

Another case of locked twins delivered
by caesarean section was reported by Vagna in 1938. The patient was a primigravida, membranes were ruptured artificially and probably it was a case of hypertonic uterine action. Caesarean section was done. The first baby, weighed 2700 gm. and the second 2600 gm. It was a case of monoamniotic twins.

**Group III Baby A Vertex—Baby B Transverse**

Group III vertex—transverse. The baby of B prevents head A from entering the pelvic inlet, and collision results. Disengagement must be tried first and if it fails classical caesarean section is indicated.

**Group IV—Baby A Breech—Baby B Breech**

In double breech presentations abdominal delivery will avert a traumatic and calamitous vaginal delivery. If both infants are dead, disarticulation of one or both lower extremities of the obstructing foetus may permit vaginal delivery of the other foetus.

**Summary**

One case of locked twins of vertex—vertex group has been reported in this article. Detailed review of other 18 cases reported so far of the same, Group has been done. Etiological factors and the management has been discussed in short.

**Acknowledgement**

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**References**