

## LOCKED TWINS

(A Case Report)

by

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The complication of twin locking has a peculiar charm of its own, mainly because of its extreme rarity and partly because of the fascinating drama of one foetus obstructing the delivery of the other. Moreover, it often offers the opportunity for the performance of destructive operations, now so rare.

### *Incidence*

Its exact incidence is difficult to compute. The oft-quoted incidence of von Braun, viz. 1 case in 90,000 deliveries at the two Vienna clinics, is generally accepted, perhaps for want of any other figures. Horder (1944) and Stenström (1951) believe the incidence to be higher. Cohen *et al* (1965) give the incidence to be in 71,644 deliveries or 1 in 817 twin deliveries. Lister (1960) reported 7 cases among 17,230 deliveries over a period of 4 years, giving an incidence of 1 in 2,461 deliveries or 1 in 140 twin deliveries. This very high incidence must be taken as exceptional and cannot be accepted as a general

occurrence. Most of the busy obstetricians would wind up their career without seeing a single case. William Smellie did not come across a single case, while Munro Kerr saw but one case in his busy practice extending 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. Some of the earliest references in the British literature appear to be by Ramsbotham (1851) and McClintok (1876). Lawrence (1949), analysed 28 cases collected from the literature from 1907 and added 3 cases. His list was very incomplete. Nissen (1958), collected 68 cases from world literature, from 1882 through April 1957, added one case of his and mentioned a case of Colliton in the addendum. However, Falke (1939) quotes Jahkola as having collected 83 cases up to 1936. Out of the 70 cases of Nissen, 45 date after 1936. Besides, he missed at least 4 cases viz. 1 case reported by McKenzie and Quist (1956), 1 case described by Moir (1949) and 2 cases of Sir E. Holland, reported by McLennan *et al* (1955). Besides 5 previously unreported cases were brought to light during the discussion following the presentation of Williamson's (1953) paper. Thus, 137 cases were report-

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ed at the end of Nissen's publication. After Nissen's paper one case each has been reported by Kreis and Miller (1958), Mahon (1959), Cunningham (1960), Schwengler (1960), Bennett (1962), Carlson and Henry (1962), Bulfin and Burnat (1963), German and Taylor (1965), Castello (1965) and Parmar *et al* (1967). ElDeiry (1960) reported 2 cases and stated that he knew of one case which is not reported previously. Lister (1960) has reported 7 cases, all with breech-vertex combination. Wadell and Hunter (1960) reported 3 cases. Cohen *et al* (1956) reported 6 cases, one of which was already published by Kreis and Miller (1958). Thus, it seems that 165 cases are on record so far and the present one appears to be the 166th case to be reported.

#### Case Report

Mrs. S. M., a 20 year old Muslim primigravida, was transferred to Bai Motlibai Hospital (attached to Grant Medical College) from a small Municipal hospital on 9th October 1963 at 12 noon for supposed footling presentation. According to her, she was running the 9th month of pregnancy but she could not give the date of her last menstrual period. She was getting labour pains and her membranes had ruptured at home at 2 A.M. the same day. She was slightly anaemic, had moderate oedema over the legs and showed no proteinuria. Her blood pressure was 150/100 mm. Hg. and pulse rate 90 per minute. Fundal height measured 30 cm. and umbilical girth 97 cm. Abdominal examination showed breech presentation (R.S.A.), the breech having engaged in the brim. A suspicion of twin pregnancy was aroused as the foetal head appeared rather small for the size of the uterus. Foetal heart sounds could not be heard. Internal examination showed that membranes were absent, cervix was more than half dilated, thinned out and

completely taken up, and a complete breech (R.S.A.) was in the upper pelvic cavity. At 1 P.M. the cervix was found to be fully dilated but the uterine contractions were infrequent and poor. During the next 45 minutes there was neither further progress nor improvement in uterine action. So, at 1-45 P.M. an intravenous pitocin drip with 2 units of pitocin in a pint of 5 per cent glucose was started. Good uterine contractions soon followed and at 2-10 P.M. the breech was seen at the vulval outlet. An episiotomy was done after infiltration with 1 per cent novocaine and soon thereafter the foetus was born upto the umbilicus. The shoulders were delivered with some difficulty. Attempts to deliver the head by Burns-Marshall technique failed. A vaginal examination at this stage showed that the overstretched neck of the foetus was felt in the right anterior part of the pelvic cavity and alongside the neck was a deflexed head in left occipito-posterior position covered by flat membranes. Examination under open ether anaesthesia revealed that there was no connection between the neck and the head in the pelvic cavity, while the neck could be traced upwards to the chin of another head which was extended. A diagnosis of twin locking, chin-to-chin variety, was made. An attempt to disengage the head failed since neither of the heads could be dislodged upwards. A craniotomy was performed on the head of the second foetus (presenting as L.O.P.) with a Simpson's perforator and the brain matter flushed out with a blunt flushing curette. Traction on this collapsed head by means of two bull-dog forceps resulted in their slipping off without making the head descend. The trunk of the first foetus was now pulled down as much as possible and its head decapitated, with some difficulty, by means of a strong long scissors taking due precautions not to traumatise the vaginal walls. Two blades of a three-bladed cephalotribe were now applied to the perforated head, the central blade passing inside the skull cavity and the other one over the occipital region, and the foetus delivered by exerting traction on them. Traction by a bull-dog volsellum applied to the cervical stump of the first baby could deliver the decapitated head

without difficulty. Since the placenta did not separate quickly it was removed manually. Before suturing the episiotomy, the uterus was digitally explored and the cervix inspected to exclude trauma.

Both babies were female, the first weighing 1300 gms. while the second 1150 gms. Examination of the placenta and membranes revealed the twins to be uniovular.

An x-ray pelvimetry was carried out on the 5th day after delivery. The true conjugate measured 10.3 cms. and the transverse diameter of the brim measured 12.1 cm. The pelvis belonged to class A and hence was roomy according to our criteria for Indian patients (Parikh and DeSa Souza, 1960).

The puerperium was uneventful, the patient being discharged in good condition on 18th October 1963.

### Comments

This case exhibited many of the aetiological factors considered contributory to the occurrence of twin locking viz. primiparity, young age of the mother, premature rupture of membranes, roomy pelvis, small fetuses and possibly employment of oxytocics during the second stage. Stenström (1951) found a higher incidence in uniovular twins. ElDeiry (1960) found that majority of the leading fetuses in breech-vertex combination presented as a complete breech. He argues that breech with extended legs would prevent close contact between the head of the second fetus and thorax or neck of the first. The present case was one of uniovular twins and the leading fetus presented as complete breech. Other aetiological factors mentioned in the literature are — oligohydramnios, hypertonicity of the uterus, extension of the head (Coleman, 1936), and monoamniotic twins. For obvious reasons the last factor is sug-

gested to be contributory by some, but Quigley (1935) could not find a single instance of locking in monoamniotic twins. He found that the danger to monoamniotic twins is not locking but knotting or twisting of cords. All the same, Quigley seems to have overlooked at least 2 cases of twin locking in monoamniotic twins viz. those of Gehse (1926) and deSenibus (1932). The reported incidence of monoamniotic twins varies between 1 in 6,000 deliveries given by Muller and 1 in 60,000 deliveries given by Rosenberg (Quigley, 1935). Tafien *et al* (1960) state that monoamniotic twins occur once in 16,000 deliveries or once in 132 twin deliveries. If their figure is accepted one should meet with one case of monoamniotic twins in 132 cases of locked twins. However, in Nissen's series of 70 cases a single amniotic sac was observed in 7 cases and communication between the sacs through a 4-inch aperture in the chorio-amniotic septum was noted in 1. It thus appears that presence of one amniotic sac is contributory to the occurrence of twin locking.

Lawrence (1949) divided the cases in 4 groups: breech-vertex, vertex-vertex, vertex-transverse and breech-breech. Of these the first one is by far the commonest, accounting for 46 cases out of 70 in Nissen's series. But only 9 of these 46 were chin-to-chin locking.

British writers are generally content to use the term 'twin-locking' in a broader sense to include all cases of entanglements of twin fetuses. The terms collision, impaction, compaction and interlocking which are fre-

quently used to describe twin foetal entanglements are clearly defined by Nissen (1958).

The diagnosis of locked twins is usually made late in labour, as in the present case. This is not surprising because true locking occurs only during the process of labour. Prior knowledge of twin pregnancy goes a long way in leading to the suspicion of twin locking. Once the possibility is thought of, the diagnosis can be easily confirmed or excluded by a thorough examination, if necessary, under anaesthesia. An x-ray examination, if readily available, is invaluable especially in vertex-vertex and vertex-transverse combinations. The differential diagnosis in a case of chin-to-chin locking would be either an aftercoming hydrocephalic head or a double-headed monster. The latter would also figure in the differential diagnosis of a case belonging to the vertex-vertex group.

Treatment of twin-locking cannot be premeditated since the obstetrician faced with a case is unlikely to have any past experience of a similar situation to fall back upon. Whenever chin-to-chin locking is suspected employment of fundal pressure and traction on the breech from below should be scrupulously avoided as both these would make the situation worse and mar the chances of disengagement. Disengagement under anaesthesia would be the treatment of choice. If it fails from below it would fail from above too, as happened in the case of Williamson (1953) who had to resort to decapitation during a lower segment caesarean operation which had to be under-

taken, after disengagement as well as decapitation failed from below. If disengagement fails from below the next choice would be to perform decapitation on the first foetus which by now is dead. In retrospect, it is felt that in the present case craniotomy on the head of the second foetus was a misconceived and unwarranted operation. It was prompted by the fact that foetal heart sounds were absent altogether and that decapitation of the first foetus did not appear to be easy. Yet craniotomy on the second foetus is less likely to yield results than decapitation of the first foetus. Craniotomy on the second foetus in a chin-to-chin locking could be reasonably resorted to if the second foetus is dead while the first one is still struggling to survive. Caesarean section has hardly any place in the treatment of chin-to-chin locking barring the very exceptional situation that Williamson (1953) had to face. However, it does have a place in cases of impaction or locking in groups other than breech-vertex combination. Kimball and Rand (1950) described a technique of delivery in chin-to-chin locking. When the first baby was delivered upto the shoulders, Piper forceps was applied to the head of the second twin and after the head of the second baby was extracted both the babies were delivered simultaneously.

In Nissen's (1958) series the perinatal mortality was 43 per cent yet it is remarkable that there was no instance of uterine rupture or maternal death. Maternal safety ought to be the prime consideration while treating this very rare complication presented by a pleuriparturient.

*Summary*

(1) The 166th case of twin locking is reported.

(2) This is a case of chin-to-chin locking treated by craniotomy on the head of the second foetus and decapitation of the first foetus.

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