

A STUDY OF 100 CONSECUTIVE CASES OF SHOULDER PRESENTATION IN ADVANCED LABOUR

by

RAMA VAISH, M.S., M.R.C.O.G. (Eng.), F.A.C.S.

In India, the incidence of transverse lie and shoulder presentation still remains very high, the major factors responsible being multiparity in the mother and prematurity in the child. These two factors are found with greater frequency in the rural population which has got the additional disadvantage of not having any antenatal care. The nearest district hospital is several miles away from these villages and the means of transport are very poor. Therefore, cases of shoulder presentation in advanced labour are frequent emergency admissions. The following series deals with hundred consecutive cases of shoulder presentation admitted in advanced labour in the last four years, from May 1957 to March 1961, at the A. H. M. and Dufferin Hospital, Kanpur, which constitutes the Department of Obstetrics and Gynaecology of the G. S. V. M. Medical College, Kanpur. During this period, the number of deliveries in the Hospital was 15,305, of which the total number of cases of transverse lie and shoulder presentation was 178. Out of these 178 cases, 100 cases were reckoned to be in advanced labour, and make the basis of study of this article. By advanced labour is meant that the

cervix was half or more dilated, and therefore, cases of shoulder presentation admitted in pregnancy, early labour or associated with placenta praevia are not included in this series. In the majority of the cases membranes had ruptured, shoulder had impacted and hand was prolapsed for several hours, baby was dead and mother's condition poor. These features are studied in some detail and the method of treatment adopted and results obtained regarding the mother and the child analysed in this article.

Duration of Labour Pains

Sixty-one per cent of patients were admitted with labour pains lasting for 12 hours or more, 18 patients being in labour for 24 hours, 7 patients for 2 days, 6 patients for 3 days and 2 patients having been in labour for 4 days. In 11 patients, duration of labour was not recorded.

Duration of Ruptured Membranes

Only 9 patients had intact membranes and in 4 patients membranes ruptured on or soon after arrival. Thirty per cent of the patients had ruptured membranes for 12 hours or more, of which 4 patients had ruptured membranes for 2 days and 3 patients for 3 days. In 20 cases, the

* Reader in Obstetrics & Gynaecology, G. S. V. M. Medical College, Kanpur.

TABLE I
Duration of Labour in Hours in 100 Cases

No. of hours	4	8	12	16	24	36	48	72	120	Not known
Nos. of cases	15	13	16	8	18	4	7	6	2	11

TABLE II
Duration of Ruptured Membranes in Hours in 100 Cases

No. of hours	Intact	Immediately after arrival in hospital	4	8	12	16	24	36	48	72	Not known
No. of cases	9	4	21	16	4	4	11	4	4	3	20

duration of ruptured membranes was not known.

Duration of Prolapsed Hand

Forty-four patients had presentation of shoulder, elbow or hand and 56 had prolapsed hand, of which 14 cases also had prolapsed cord. Of these 56 cases, in 3 the hand prolapsed soon after arrival in the hospital, and in 9 cases the duration of prolapse was not known; the rest of the patients had prolapsed hand for 2 hours or more, 6 patients for 12 to 16 hours, 1 patient for 24 hours and 1 patient for 24 hours and 1 patient for 2 days.

TABLE III
Incidence of Presentation and Prolapse of Hand and Cord in 100 Cases

	Number of cases
Presentation of upper limb	44
Prolapse of hand	56
Cord prolapse (associated with hand prolapse)	14

Degree of Dilatation of Cervix

In 36% of the cases, the cervix was nearly half dilated, in 35% there was only a rim all round, and in 21% of the cases the cervix was fully dilated. In 8 cases, dilatation of cervix was not known.

TABLE IV
Duration of Prolapsed Hand in Hours (Total 56 cases)

No. of hours	Immediately after arrival in hospital	2	4	6	8	12	16	24	48	Not known
No. of cases	3	14	10	7	5	3	3	1	1	9

TABLE V
Degree of Dilatation of Cervix

Dilatation	Half (3 to 4 fingers)	3/5 to 4/5 (rim only)	Full	Not known
No. of cases	36	35	21	8

Type of Pelvis

Assessment of pelvis was done by clinical examination. In 70% of the cases the pelvis was normal. It was contracted only in 14 cases; there was mild contraction in 10, moderate in 3 and severe only in one case. In 16 cases the type of pelvis was not known.

Condition of Mother on Admission

Eighty-seven per cent of the cases were admitted with pyrexia, infection of genital canal, exhaustion and dehydration; in 5 cases these features were very marked and one case was admitted in a moribund state as a case of ruptured uterus, having been in labour for three days and hand prolapsed for over 16 hours. This case has been dealt with in greater detail under the heading of maternal deaths.

Method of Treatment

All patients were treated for shock, exhaustion and infection by rest, sedatives, intra-venous infusions, chemo-therapy and anti-biotics. Blood transfusion and broad spectrum anti-biotics were also employed freely.

The methods employed for delivery were mainly by internal version and extraction, caesarean section and embryotomy. Two cases of ruptured uterus occurring during attempts at vaginal delivery had laparotomy and hysterectomy. One patient delivered spontaneously a macerated foetus. One patient was admitted in such a moribund condition that she died undelivered a few hours after admission.

TABLE VI
Method of Treatment Employed for
Effecting Delivery in 100 Cases of
Shoulder Presentation

Method	No. of cases
Internal version and extraction ..	69
Internal version and bringing down leg	3
Caesarean section	18
Embryotomy	8
Spontaneous delivery	1
No treatment	1

Internal Version and Extraction

Internal version and breech extraction was attempted in 73 cases. It was successful in 69 cases and unsuccessful in 4 cases and the latter had to be terminated by caesarean section. Internal version formed the main line of treatment, as in majority of the cases, the cervix was more than half dilated, the genital canal infected and the baby either already dead or too premature to survive. Maternal results were very satisfactory, as out of 69 cases 60 recovered uneventfully, there was no maternal death and only one patient had ruptured uterus. Regarding the foetal result of internal version, the over-all foetal mortality was 75.4% and corrected foetal mortality was 15%; 42 babies were already dead and only 27 were alive on admission. Of the 27 live babies, 17 were born alive, and 10 were still-births, of whom only three were mature babies.

Caesarean Section

Eighteen patients were treated by caesarean section, all being lower segment operations. In 4 cases, caesarean section was done after attempts at vaginal delivery had failed, 3 being cases of failed internal version and

TABLE VII
Maternal and Foetal Results of Internal Version and Extraction in 69 Cases

Maternal result				Foetal result	
Result		No. of cases	Percentage		
Uneventful	..	60	87	Overall foetal	
Pyrexia	..	7	10	wastage	75.4%
Obstetric shock	..	1	1.4	Corrected foetal	
Ruptured uterus	..	1	1.4	wastage	15%
Death	..	Nil	Nil		

one failed internal version and embryotomy. Attempt at vaginal delivery was not persisted in these four cases for fear of uterine rupture. Of these four cases, 3 had severe puerperal sepsis (one also having total disruption of wound) but ultimately recovered; the patient who had caesarean section after failed embryotomy recovered uneventfully. Regarding the foetal result in these four cases, three were still-births and one was born alive but had Erb's palsy. Of the 14 cases who had caesarean section as the first line of treatment, 11 had uneventful recovery, 2 had post-operative pyrexia and one had wound sepsis. All babies were born alive and, except 3, were mature. The indications for caesarean section were contraction of pelvis in 6 cases, dilatation of cervix 3 fingers only in 4 cases, cord prolapse in 2 cases, one

of whom was also a primigravida and bad obstetric history in one case.

Embryotomy

Destructive operations on foetus were attempted in nine cases, the type of operations being decapitation and evisceration. In one of these cases, the baby could not be extracted even after embryotomy and hence the delivery was completed by lower segment caesarean section and this patient recovered without any complication. In the remaining 8 cases where the baby was delivered by embryotomy, only 3 had uneventful recovery, one had severe sepsis of genital canal, one had obstetric shock, and one had ruptured uterus followed by laparotomy and hysterectomy. This last patient had a very stormy convalescence and developed a vesico-vaginal fistula. There were two maternal deaths in this series.

TABLE VIII
Maternal and Foetal Results of Caesarean Section in 18 Cases

Maternal result				Foetal result	
Result		No. of cases			
Uneventful recovery	..	12		Overall foetal	
Total disruption of wound	..	1		wastage	17%
Wound sepsis	..	5		Corrected foetal	
				wastage	Nil

TABLE IX
Maternal Results in 7 Cases Delivered
by Embryotomy

Result	No. of cases
Uneventful recovery	3
Puerperal sepsis	1
Obstetric shock	1
Ruptured uterus, Laparotomy and hysterectomy, V. V. F.	1
Death	2

Overall Maternal Result

In 81% cases, recovery was uneventful, there being minor incidence of pyrexia, bronchitis, or urinary infection soon subsiding by appropriate treatment. In 14 cases, there was high and prolonged pyrexia and in 6 cases, frank sepsis of wound in the abdomen. Three cases had profound obstetric shock treated on usual anti-shock measures, intra-venous infusions and blood transfusion. There were 3 cases of ruptured uterus and 3 maternal deaths; these are described below in some detail.

TABLE X
Maternal Result in 100 Cases of Shoulder
Presentation

Result	No. of cases
Uneventful recovery (except temp. upto 100 F. which soon subsided)	81
Prolonged and high pyrexia ..	14
Gross sepsis of abdominal wound ..	6
Total dehiscence of abdominal wound	1
Major degree of obstetric shock ..	3
Ruptured uterus	3
Vesico-vaginal fistula	1
Deaths	3

Cases of Ruptured Uterus

1. 30 years old 5th gravida, 34 weeks pregnant, was admitted in a state of marked dehydration and exhaustion, pulse being 130/mn. B.P. 90/50, and temperature 101°F. The hand was prolapsed for 4½ hours,

foetus was dead and cervix was fully dilated. Embryotomy was done and exploration revealed rupture of uterus in the lower segment. Laparotomy and hysterectomy were performed. Patient had a very stormy convalescence and developed a vesico-vaginal fistula.

2. 30 years old, 10th gravida, full-term, was admitted with ruptured membranes and prolapsed hand for 2 hours; cervix was fully dilated and foetus dead. Internal version and manual removal of placenta were performed, followed by exploration of uterus which showed rupture of lower segment. Laparotomy and hysterectomy were carried out. Mother had uneventful recovery.

3. Please refer to case No. 1 under "Maternal Deaths".

Maternal Deaths

1. S. W. 25 years old, 4th gravida, full-term, in labour for 3 days and hand prolapsed for over 16 hours was admitted with ruptured uterus, peritonitis, and severe obstetric shock. Her condition did not improve after intravenous infusions and blood transfusion and she expired a few hours after admission, undelivered.

2. J. 26 years old, 4th gravida, full-term, in labour for 3 days, hand prolapsed for 2 days was admitted in a condition of marked shock, infection and exhaustion. Uterus was severely retracted, embryotomy was performed; she died 12 hours later. Unfortunately uterus was not explored and neither was a postmortem carried out.

3. R. R. 7th gravida, 30 years old, full-term, was admitted with hand and cord prolapsed for 12 hours. Baby was delivered by embryotomy. Patient had cervical tear, which was sutured. She developed severe obstetric shock and died 3 hours later; no post-mortem was carried out in this case also.

Foetal Result

Foetal results in this series were:—

Overall foetal wastage	77%
Foetal wastage after excluding babies admitted dead .. .	42.5%

Foetal wastage after
excluding premature
babies and babies
admitted dead . . . 26%

Comment

The management of shoulder presentation in advanced labour was on the usually accepted three lines, i.e., internal version and extraction, caesarean section and embryotomy. The maternal mortality was 3%, overall foetal wastage 77% and corrected foetal mortality of 26%. These results are compared with those of other authors in table XI. In 69% of cases, delivery was completed by internal version and breech extraction with no maternal death, an overall foetal wastage of 75.4% and a corrected foetal mortality of 15%; caesarean section was performed in 18% of cases with no maternal death,

an over-all foetal wastage of 17% and a corrected foetal mortality nil; 8% of the patients were delivered by embryotomy resulting in 2 maternal deaths.

In the present series, more than two-thirds of the cases were treated by version and extraction, as the cervix was half or more dilated; most of the patients were multigravidae, interfered with outside by untrained midwives, with sepsis of genital canal; 56% of the babies were already dead on admission and half of the live babies too premature to rear. In the majority of the patients dealt with by caesarean section as the first line of treatment, there was present an associated condition like contracted pelvis, prolapse of cord and cervix not sufficiently dilated. In 8 cases who were treated by embryotomy, there was marked retraction of the upper uterine segment and thinning

TABLE XI
Maternal and Foetal Mortality in Various Series of Shoulder Presentation

S.No.	Author	No. of cases	Stage of Labour	Maternal Mortality	Foetal Mortality
1.	Harris & Epperson (John Hopkins Hospital) 1950	131	Not mentioned	3.05%	33.5%
2.	Webster & Geittmann (Chicago) 1956	100	Advanced labour	Nil	48%
3.	Noack, 1956	447	Not mentioned	Not mentioned	42%
4.	Gonzalez 1956	56	—do—	5.4%	57.1%
5.	Holmes (collected from various authors) 1956	399	—do—	Not mentioned	46%
6.	Present series	100	Advanced labour	3%	77%

four cases we would have been faced with a ruptured uterus.

Waiting for more dilatation of the cervix to enable introduction of a hand in the uterus for version is not wise, as the forces, which cause cervical dilatation also cause impaction of shoulder, foetal asphyxia and prolapse of cord. Wood and Forster say that prolapse of the cord, while the patient with shoulder presentation was under observation in the hospital, caused the death of 11 babies in their series and conclude that "this occurrence in an institution where an operation theatre is readily available, indicates that there is little place for expectant treatment of a transverse foetal lie in labour". Besides the ever present risk of foetal death while waiting, the obstetrician has to face a retracted uterus to perform version and the difficulties and dangers are considerable. The foetal mortality rises considerably and maternal mortality and morbidity are also great. Hence as soon as the patient's shock, dehydration and exhaustion have been treated, the baby should be treated by the appropriate method.

There is no necessity for a caesarean hysterectomy in infected or neglected cases, as advocated by some obstetricians, as the infection can always be combated by the modern antibiotics, neither is the upper segment caesarean section necessary. In our series of cases we did not find any more difficulty with the performance of lower segment operation than in any other case of obstructed labour in late stage.

In my opinion, there is no place for manual dilatation of cervix in

modern obstetrics. Insertion of hydrostatic bag in the vagina for the prevention of rupture of membranes or prolapse of cord is not of much practical value.

It is said by Johnstone and Kellar that exhaustion of uterus and uterine inertia is a comparatively rare occurrence but this was fortunately a common occurrence in our series of cases, and was probably the factor which prevented uterine rupture in patients, who had ruptured membranes and prolapsed hands for several hours and even days. We had only one case of spontaneous rupture of uterus in labour due to shoulder presentation in our 100 cases as against 25% of Ursula's series, in spite of the fact that 21% of our cases were admitted with full dilatation of cervix.

The necessity of exploring the uterus after a vaginal manipulative delivery in a case of shoulder presentation, no matter how easily performed, can not be repeated too frequently, as two of our cases were lost probably due to undiagnosed ruptured uterus following internal version and embryotomy respectively.

Summary

1. A review is presented of 100 consecutive cases of shoulder presentation admitted in advanced labour in a period of four years at the A.H.M. & Dufferin Hospital, Kanpur; the total number of cases of transverse lie and shoulder presentation being 178 cases and the number of deliveries being 15,305 during this period.

2. The series includes only cases of advanced labour i.e., cervix half or

more dilated, and therefore, does not include cases admitted in pregnancy, early labour or those associated with placenta praevia.

3. 61% of the patients were admitted with labour pains and 30% with ruptured membranes for 12 hours or more; 56% were admitted with prolapsed hand and 14% also with prolapsed cord; 21% were admitted with cervix fully dilated; 56% of babies were already dead on admission.

4. 69% of patients were delivered by internal version and extraction, 18% by caesarean section and 8% by embryotomy.

5. 81% of patients recovered without complications. There were three maternal deaths and three cases of ruptured uteri. Overall foetal wastage was 77% and corrected foetal mortality was 26%.

References

1. Baird, D. (1957): Combined Text Book of Obstetrics and Gynaecology; E. & S. Livingstone Ltd. P. 450.
2. Donald, I. (1959): Practical Obstetric Problems; Glasgow. P. 243.
3. Dorman, D. B. (1951): J.A.M.A., 147, 1404-1406.
4. Garber, E. C., Jr., Ware, H. H., Jr. (1951): Am. J. Obst. & Gynec., 61, 62.
5. Gonzalez (1956): Rev. Obst. Gynec. Caracas, 16, 11.
6. Greenhill, J. P. (1955): Principles and Practice of Obstetrics; W. B. Saunders, Co. P. 673.
7. Greenhill, J. P. (1958-1959): Year Book of Obstetrics and Gynaecology. P. 214 (Ed.).
8. Harris, B. A., Epperson, J. W. W. (1950): Am. J. Obst. and Gynec.; 59, 1105.
9. Holland, E. (1955): British Obstetric and Gynaecological Practice (Obstetrics). P. 634.
10. Holmes, J. M. (1956): Guy's Hosp. Rep.; 105, 428-432.
11. Johnstone, R. W., Kellar, R. J. (1957): A Text Book of Midwifery; London. P. 234-235.
12. Lister A. Wilson, Jr., Glenn B. Updike, Jr., W. Norman Thornton, Jr., and Dwight J. Brown, Jr. (1957): Am. J. Obst. & Gynec., 74, 1257-1265.
13. Lister, U. G. (1960): J. Obst. Gynaec. Brit. Emp.; 67, 192.
14. Moir, C. (1956): Munro Kerr's Operative Obstetrics. P. 222.
15. Noack (1956): Zentrabl. Gynak; 78, 1015.
16. Webster, A., Geitmann, W. F. (1956): Am. J. Obst. & Gynec.; 72, 34-39.
17. Wood, E. C., Forster, F. M. C. (1959): J. Obst. Gynaec. Brit. Emp.; 66, 80.