

A STUDY OF DEFLEXED HEADS

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Introduction

There is a good amount of contradiction amongst different authors as to whether the face and brow presentations are essentially primary or secondary to deflexed cephalic presentations of the foetus (White, 1954; Eastman and Hellman, 1966). The answer is difficult to obtain from the study of the cases presenting as face or brow because most of the cases are admitted after the onset of labour. So an attempt was made to study the deflexed cephalic presentations detected clinically at term by roentgenography and they were followed upto their labour and delivery to see their degree of deflexion, clinical behaviour during labour and whether any or some of them were converted into face or brow.

This was thought necessary because only by this study one can say whether deflexed condition of the foetal head really undergoes a spontaneous conversion to face or brow presentation.

Materials and Methods of Study

Material: One hundred forty-nine consecutive cases of clinically deflexed head at term were selected from Chittaranjan Seva Sadan from January, 1976 to

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November, 1977, irrespective of age and parity. These were investigated roentgenographically and constituted the material of study.

Methods of Study: The patients were examined thoroughly clinically. Their age, gravidity, religion and socio-economic status, were analysed along with the history of previous pregnancies in cases of multigravidae. The patients underwent a thorough obstetric examination giving special emphasis on pelvic assessment. An attempt was made to find out and correlate the factors leading to either its correction as flexed cephalic presentation or deflexed semi-extended and extended cephalic presentation. All these patients were subjected to roentgenographic investigations to correlate the clinical findings and radiological observation. All these patients were followed upto their delivery and correlation was attempted as to how many cases developed into brow or face from these deflexed cephalic presentations.

Criteria of assessing deflexion were as followed

1. *Clinical*

(a) Head must be floating at or near term or at the onset of labour.

(b) On first pelvic grip the occiput and sinciput are at the same level or the sinciput is at a lower level than the occiput.

(c) The narrow sinciput is only felt above the symphysis pubis and the occiput is not properly felt.

(d) The anterior shoulder is palpated near the flank and the fetal heart sound is at the flank.

(e) On vaginal examination, the posterior fontanelle should not be easily palpable and anterior fontanelle, too, palpated with difficulty.

The diagnosis of deflexed head was mainly based on the above noted clinical points—(a), (b) and (c), (d) and (e) are only supportive evidence.

2. Radiological Evidence

In diagnosing deflexed head, radiological evidence is most authentic. Palpation of the foetal head in dorsal decubitus is prone to be misleading. The clinically diagnosed deflexed heads were examined radiologically to assess the correct attitude of the cephalic presentation. The usual radiological criteria of deflexion is to find out the relation between the foetal axis and antero-posterior diameter joining the sinciput and occiput. The angle towards the sinciput should be less than 90° , if the head is flexed. It is considered to be deflexed if this angle is 90° or more. The flexed or deflexed attitude of the foetal head is again reflected in the curvature of foetal spine. If it is well curved it appears like a 'C' the head is said to be flexed. While analysing the radiographs it was noted that these criteria of deflexion did not have good correlation with the clinical findings. Then it was decided to have a new criteria of deflexion. Relation between the antero-posterior diameter i.e. the line joining the sinciput and occiput of the foetus and the vertical axis of the maternal pelvis was taken into consideration. If the line joining the occiput and the sinciput of the foetus make an angle

less than 90° with the vertical axis of pelvis towards sinciput, the head is taken to be flexed. If it is 90° or more, the head is considered deflexed.

Complete/incomplete extension is decided by the sigmoid curvature of spine but the curvature of spine was found to be of little significance in cases of deflexion. It was noted that in case of Median vertex both these criteria concurred. The importance of this new criteria was further corroborated by the final outcome of the labour. Greater number of brow and face greater number of occipito posterior and occipito transverse position of the head were encountered during delivery either during the time of caesarean section, and vaginal delivery whether normal or by manoeuvres like forceps delivery, manual rotation and forceps application or delivery by Ventouse.

Table I shows the analysis of 149 patients with clinically deflexed heads in relation to their gravidity and roentgenographic diagnosis of deflexion. It shows that although clinically the head seemed deflexed, in these 149 cases, 35.5% of them were seen to be flexed, when skiagram was taken. Out of the remaining cases, only 26.8% was grossly deflexed. One turned out to be a completely extended face and 4 were brow presentations. These grossly deflexed heads have been designated as median vertex by many authors. In 26.1% cases the deflexion was moderate and in 11.4% cases it was mild. It is interesting to note that gross and moderate deflexion was more marked in the multiparae patients than in primigravidae, although clinically deflexion was detected more in the primigravidae (72 out of 149 cases). Parity and previous obstetric behaviour of these cases were analysed and presented in Table II.

TABLE I
Analysis of 149 Cases of Deflexed Heads in Relation to their Gravidity and Roentgenographic Deflexion

Gravidity	Total No. of cases	Deflexion +++	Deflexion ++	Deflexion +	Flexion
Primi	72 (48.32%)	10* (13.88%)	21 (29.16%)	10 (13.88%)	31 (43.05%)
2nd	31 (20.8%)	10 (32.25%)	10 (32.25%)	1 (3.22%)	10 (32.25%)
3rd	15 (10.06%)	10 (66.66%)	1 (6.66%)	1 (6.66%)	3 (20.0%)
4th	10 (6.7%)	4 (40.0%)	2 (20.0%)	—	4 (40.0%)
5th	21 (14.09%)	6 (28.57%)	5 (23.8%)	5 (23.8%)	5 (23.8%)
Total	149 (100%)	40 (26.89%)	39 (26.17%)	17 (11.4%)	53 (35.57%)

* One case was diagnosed as primary face.

TABLE II
Analysis of 77 Multiparae Patients in Relation to their Previous Obstetrical History and Gravidity

Gravidity	Total No. of cases	Good	Previous Abortions	Previous still-births	Previous neonatal deaths
2nd	31 (40.25%)	16 (51.61%)	—	10 (32.25%)	5 (16.12%)
3rd	15 (19.48%)	10 (66.66%)	—	3 (20.0%)	2 (6.66%)
4th	10 (12.98%)	5 (50.0%)	2 (20.0%)	3 (30.0%)	—
5th	21 (27.27%)	10 (47.61%)	—	2 (9.52%)	9 (42.85%)
Total	77 (100%)	41 (53.24%)	2 (2.59%)	18 (23.37%)	16 (20.77%)

Table II shows an analysis of these 149 patients in relation to their previous obstetrical history and gravidity. The previous obstetrical history was good in 53.24% of cases. Stillbirth occurred in 23.37% of cases and perinatal mortality in the previous pregnancies was found in 16 out of 77 cases (20.77%), other than stillbirths. This led the investigators to

analyse the pelvis of the patients to find out if any defect in the pelvic architecture was responsible for these foetal losses. Analysis of the pelvis of the patients having deflexed head at term is presented in Table III.

Table III is an analysis of these patients in relation to their types to pelvis and parity. The pelvis was found to be ad-

TABLE III
Analysis of 149 Patients of Deflexed Heads in Relation to their Type of Pelvis and Parity

Gravidity	Total No. of Cases	Pelvis Gynaecoid (adequate)	Android Type	Anthropoid Type	Flat Type	Small Gynaecoid
Primi	72 (48.32%)	40 (55.55%)	5 (6.94%)	15 (20.83%)	7 (9.72%)	5 (6.94%)
2nd	31 (20.8%)	15 (48.38%)	5 (16.12%)	1 (3.22%)	5 (16.12%)	5 (16.12%)
3rd	15 (10.06%)	10 (66.66%)	5 (33.33%)	—	—	—
4th	10 (6.7%)	10 (100.0%)	—	—	—	—
5th	21 (14.09%)	15 (71.42%)	—	1 (4.76%)	3 (14.28%)	2 (9.52%)
Total	149 (100%)	90 (60.40%)	15 (10.06%)	17 (11.4%)	15 (10.06%)	12 (8.05%)

TABLE IV
Analysis of 149 Patients of Deflexed Head in Relation to their Parity, Position and Presentation During Labour

Parity	Total No. of Cases	Occipito-anterior	Deflexed		Extended	
			Occipito-posterior	Occipito-transverse	(Partial) Brow	(Complete) Face
Primi	72 (48.32%)	29 (40.27%)	26 (36.1%)	6 (8.33%)	4 (5.55%)	7 (9.72%)
2nd	31 (20.8%)	19 (61.29%)	4 (12.9%)	5 (16.12%)	1 (3.22%)	2 (6.45%)
3rd	15 (10.06%)	7 (46.66%)	5 (33.33%)	1 (6.66%)	1 (6.66%)	1 (6.66%)
4th	10 (6.7%)	4 (40.0%)	1 (10.0%)	3 (30.0%)	1 (10.0%)	1 (10.0%)
5th	21 (14.09%)	8 (38.09%)	7 (33.33%)	1 (4.76%)	3 (14.28%)	2 (9.52%)
Total	149 (100%)	67 (44.96%)	43 (28.85%)	16 (10.73%)	10 (6.71%)	13 (8.72%)

equate in 60.4% of cases, it has some android element in 10.06% of cases, it was of anthropoid type in 11.4% of cases and flat and small gynaecoid type was found in 10.06% and 8.05% of cases respectively. It is also interesting to note

specific influence on the sequence of events.

The mode of delivery in these cases with deflexed heads was analysed and the results are shown in Table V.

In Table V it was found that 76.71% of

TABLE V

Analysis of 149 Patients of Deflexed Heads in Relation to their Mode of Delivery and Parity

Gravidity	Total No. of cases	Normal Delivery	Caesarean Section	Forceps
Primi	72 (48.32%)	51 (70.83%)	15 (20.83%)	6 (8.33%)
2nd	31 (20.8 %)	22 (70.96%)	9 (29.03%)	—
3rd	15 (10.06%)	10 (66.66%)	5 (33.33%)	—
4th	10 (6.71%)	7 (70.0 %)	—	3 (30.0 %)
5th	21 (14.09%)	15 (71.42%)	5 (33.33%)	1 (4.76%)
Total	149 (100%)	105 (70.46%)	34 (22.81%)	10 (6.71%)

that the defect in the pelvic architecture was more in the multiparae than in the primigravidae patients.

The behaviour of these cases during labour and delivery either via *naturalis* or by caesarian section were studied which is placed in Table IV.

In Table IV 149 cases of clinically diagnosed deflexed heads at term were followed during their labour and their presentations and positions of the denominator was clinically assessed and analysed which shows that all these cephalic presentations except 23 (15.4%) cases delivered as vertex. Out of these 149 cases, 67 cases (44.96%) presented as occipito-anterior, 43 (28.85%) as occipito-posterior and 16 (10.73%) as occipito-transverse; as their labour progressed, 10 cases (6.71%) turned out to be brow and 13 cases (8.72%) became completely extended and delivered as face. The analysis in relation to the parity did not show any

cases were delivered via *naturalis*, out of which 70.46% had a spontaneous normal delivery. Institution of caesarean section in these cases was more frequent than normal cephalic presentation, or in cases of face presentation but lesser than that of brow presentation. Incidence of caesarean section in this group was 22.8%. This was more frequently done in multiparae than in primigravidae, whereas forceps delivery was done in 10 cases (3.4%) of which 6 were primi, 3 in 4th gravidae and 1 in 5th gravidae.

Comments

The analysis of the results obtained by investigating 149 cases of deflexed head in relation to their gravidity, past obstetric history, types of pelvis, position of head during labour and the mode of delivery has pointed out certain interesting observations.

The study of deflexed heads was undertaken with a view to investigate the con-

troversial origin and type of the two abnormal presentation i.e. face and brow; to prove or disprove occiputo-posterior as an aetiological factor, and to establish the type of presentation, primary or secondary. All these deflexed head were clinically diagnosed at term by abdominal palpation and confirmation was sought by X-ray. The head was found to be flexed in 53 (35.57%) cases during radiography. Deflexion was mild in 17 (11.4%), moderate in 39 (26.17%) and gross in 40 (26.84%) cases.

The analysis of past obstetric history in 77 multiparae patients revealed no abnormality in 41 (53.24%) cases. History of previous stillbirths and neonatal deaths were found in 18 and 16 cases respectively.

The types of pelvis in these cases were analysed which showed adequate pelvis in 90 (60.4%) cases. In the remaining 59 cases, android type of pelvis was noted in 15 (10.06%), anthropoid in another 17 (11.4%) cases, flat type of pelvis in 15 (10.06%) small gynaecoid in the remaining 12 cases (8.05%). The incidence of flat pelvis is significantly high usual incidence is about 4%.

Out of these 149 cases, occipito-posterior position was diagnosed in 43 (28.8%), occipito-transverse in 16 (10.7%) and occipito-anterior was noted in 67 (44.9%) cases, and 10 cases were finally delivered as brow and 13 cases as face.

These cases were followed upto delivery. Normal delivery occurred in 70.5% of cases. Caesarean section had to be performed in 22.8% of cases and forceps delivery in only 6.7% of cases.

The analysis of these results confirms that brow and face presentation does develop from such deflexed cephalic presentation; as such many of them are secondary although occurrence of primary face is also a reality.

Mostar *et al* (1966) studied deflexion attitude of the foetus with cephalic presentation. They also diagnosed this deflexion attitude clinically. Most of their diagnosis was done during 1st and 2nd stages of labour, although in 33.8% of cases the diagnosis could be made only at delivery which reflects the difficulty in diagnosis. In their series, caesarean section was performed in 34.5% of median vertex, 95% of brow and 20.6% cases of face presentation.

The incidence of spontaneous delivery was more in face presentation (77.9%), least in brow (5%) and in 70.4% cases of median vertex.

The results point out that deflexed attitude will be the causative factor at least in some cases of face and brow presentation. This is influenced by many factors like uterine axis, uterine contraction and pelvic architecture specially flat pelvis during the course of labour.

Summary and Conclusion

Analysis of 149 clinically diagnosed deflexed head reveals that after radiography only 64.5% of these cases can be docketed as deflexed. Criteria of deflexion should better be accepted from the relation of occipito-sincipital line in relation to the vertical axis of maternal spine and pelvis than to that with the foetal spine.

From these deflexed cephalic position 23 (15.4%) cases were delivered as face and brow proving that these presentations are secondary in nature in most of the cases.

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