

## THE HAY'S UNIVERSAL FORCEPS

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### SUMMARY

The Hay's Forceps has been evaluated by the FOGSI Western India Trial to be a new light instrument suitably designed for delivery of the baby for the mid-pelvis downwards irrespective of the head being not rotated, asynclitic or in the occipito posterior position. The present presentation deals with the experience of 54 cases comprising of 5.2% of cases, in the age group 20-31 years, of which about 80% were primigravidae and 20% multiparae. The rates of complications were comparable to other modes of assisted vaginal deliveries like vacuum extraction and conventional forceps application. The foetal outcome was satisfactory in the series.

### INTRODUCTION

The Hay's Forcep's is a new, light instrument with inherent structural characteristics which incorporate principles and designs for suitable extraction of an engaged foetal head from the station of the mid-pelvis downwards, permitting application on the non-rotated and asynclitic head. It can also be used to extract the deeply engaged head at Caesarean section and for assisting delivery

of the after coming head during a breech delivery.

The FOGSI Western India trial has established its place in the obstetric armamentarium.

### MATERIALS AND METHODS

The obstetric case records of three years, January 1989 through December 1991 were analysed to determine the incidence and use of the Hay's Forceps and compare the same with the standard obstetric Forceps and Vacuum extraction. The data regarding age, parity, indi-

cations, station of presenting part, position of occiput and maternal complications were analysed. Foetal outcome was analysed on the basis of foetal weight, Apgar Scores, and perinatal morbidity and mortality, the results of this study are presented.

### RESULTS AND DISCUSSIONS

The incidence of application of Hay's Forceps the conventional Nevilles Barne's and Simpsons low Forceps and the Silastic vacuum are shown in Table I.

Hay's Forceps was preferred when

the IInd stage was prolonged, and there was a well developed caput formation. It was also preferred for extraction from the mid-pelvis, for delivery of a non-rotated head at a station of + 2, or for a persistent occipito-posterior position. Hays forceps can be easily applied to an asynclitic head, as it has an inherent mechanism to permit correction of asynclitism.

### MATERNAL COMPLICATIONS

In every case included in the study, a thorough vaginal inspection of the maternal soft parts in a good light was undertaken, and all injuries recorded.

Table I

#### Incidence of Instrumental Intervention

Total No. of Deliveries analysed	-	1052 cases.
Incidence of vaginal assisted deliveries	-	22.1% (222 cases)
Incidence of Salistic Vacuum	-	12.0% (131 cases)
Incidence of Conventional Forceps	-	3.9% (37 cases)
Hay's Forceps	-	5.2% (54 cases)

The table shows that silastic vacuum is the commonest used instrument to assist vaginal deliveries.

1. Age Distribution	No.	%
Under 20 years	16	7.2%
21 - 25 years	63	28.3%
26 - 30 years	84	37.8%
31 and above	59	26.5%
2. Parity		
Primigravidae	176	79.3%
Multigravidae	46	20.7%

The above tables show that about 27% of the patients were aged 31 years and over and about 20% of the patients were multiparous.

## 3. Comparison of Indications of Vaginal Instrumental Deliveries

Table II  
Comparison of Indication by Type of Delivery

Indication	Hay's Forceps	Conventional Low	Conventional Mid-pelvic	Salistic vacuum
1. Prolonged 2nd stage 2 hrs	16	—	7	—
2. Severe Foetal Distress	4	6	8	—
3. Mec. staining FHS Rg.	—	—	—	31
4. 2nd stage 1 hr.	—	—	—	30
5. Mat. Exhaustion	18	6	—	13
6. Medical Disorders	—	—	—	12
7. Occipito-post	8	—	4	4
8. Deep Trans. arrest	5	—	—	2
9. B.O.H.	3	—	—	16
10. Precious Baby	—	3	—	23
11. Slipped Sil. Vac.	—	3	—	—
<b>Total</b>	<b>54</b>	<b>18</b>	<b>19</b>	<b>131</b>

The above table shows that the Forceps was used preferentially when the 2nd stage was prolonged beyond 2 hours, or there was severe foetal distress, To accomplish a Face to Pubes delivery or occasionally when the silastic cup slipped.

## 4. Station of the presenting part and position of Occiput.

Table III  
Station of presenting part and position of Occiput

Stn. of presenting part	Position of Occiput					
	Upto + 2	+ 3 & below below	Occiput Anterior	Occiput Oblique	Occiput Transverse	O. P.
Plastic Vacuum (131)	46 (35%)	85 (65%)	72 (54.9%)	38 (29.0%)	17 (12.9%)	4 (3%)
Outlet Forceps (18)	—	18 (100%)	18 (100%)	—	—	—
Midcavity Forceps (19)	19 (100%)	—	6 (32.2%)	9 (47.3%)	—	4 (21.0%)
Hay's Forceps (54)	21 (38.8%)	32 (61.1%)	26 (48.1%)	14 (25.9%)	6 (11.1%)	8 (14.8%)
<b>Total of all assisted Intervention</b>	<b>86 (38.7%)</b>	<b>136 (61.3%)</b>	<b>122 (54.9%)</b>	<b>61 (27.4%)</b>	<b>23 (10.3%)</b>	<b>16 (7.2%)</b>

The above table shows that Hay's Forceps and Silastic Vacuum were used under similar circumstances. However, the time taken between application to delivery is shorter with the Forceps than with a Silastic Vacuum extractor.

Table V

## Maternal complications

Complications	Sil. Vac (131)	Low Forceps (18)	M. C. F. (19)	Hays (54)
1. Vaginal tears	9	3	5	3
2. Extension of epitiotomy	23	3	3	5
3. Perineal tear	19	2	3	3
4. Cervical tear	4	—	2	4
5. Para-urethral tear	2	—	1	—
6. Haematomas	1	—	—	—
7. Excessive bleeding	2	—	1	1
8. 30 P. T.	1	—	1	—

The Hay's Forceps is not more traumatic than other instruments used for assisted vaginal deliveries.

**Neonatal Outcome - Birth weight :** The following table shows distribution of cases according to birth weight.

Table VI

## Distribution of birth weights and type of delivery

Baby wt.	Nos. & % cases	Sil. Vac.	Conventional Forceps	Hay's F.
- 2.0 Kgs	(2.67%)	4	2	—
2.1 - 2.5 Kgs.	16 (7.2%)	7	5	4
2.6 - 3.0 Kgs.	45 (20.2%)	28	6	11
3.1 - 3.5 Kgs.	131 (59.0%)	77	22	32
3.6 & over	22 (9.9%)	15	22	5

**Apgar Scores :** The Apgar Score at the end of 1 min. are recorded below :

Apgar Score	Type of Delivery			
	Sil. Vac	Low Forceps	Midcavity Forceps	Hays
0 - 5	1	—	2	1
6 - 8	6	3	2	5
9 - 10	124	15	15	48
<b>Total cases</b>	<b>131</b>	<b>18</b>	<b>19</b>	<b>54</b>

All the babies could be revived with simple suction and Oxygen administration, there was no still-birth in the series.

All the babies were discharged alive and well except one baby who had spina-bifida at birth. This baby was sent for further care to a neonatal nursery.

There was no perinatal mortality in this series.