



## MANAGEMENT OF SHOULDER DYSTOCIA BY MCROBERTS MANOEUVRE COMBINED WITH SUPRAPUBIC PRESSURE

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### ABSTRACT

**BACKGROUND:** Shoulder Dystocia is an uncommon and most frightening emergencies in the delivery room. Most cases occur without warning. The neonatal morbidity associated with shoulder dystocia is very high. Various methods are described to deliver the patients with impacted shoulders. McRoberts manoeuvre combined with suprapubic pressure is one of them.

**Aim of the study:** To investigate the effectiveness of Mc Robert's Manoeuvre with suprapubic pressure for the management of Shoulder Dystocia.

**METHODS:** A retrospective study was conducted over a period of 3 years from June 2015 to June 2018 and 25 cases of shoulder dystocia were analysed. Singleton pregnancy with cephalic presentation more than 37 weeks of gestation were included in the study. Maternal and neonatal morbidity including brachial plexus injuries were recorded.

**RESULTS:** Mac Roberts manoeuvre with suprapubic pressure were found to be most effective and least traumatic procedures in the patients having shoulder dystocia.

**CONCLUSION:** The initial manoeuvre of choice, in case of shoulder dystocia should be Mac Roberts manoeuvre with suprapubic pressure.

**KEYWORDS :** Shoulder Dystocia, Neonatal Injuries, Mcroberts Manoeuvre, Suprapubic Pressure For Shoulder Dystocia

### INTRODUCTION:

Shoulder Dystocia is a nightmare for an obstetrician. The reported incidence of shoulder dystocia is 0.5-1.5% of all deliveries. Even with very large babies shoulder dystocia occurs occasionally and sporadically and more importantly without any warning signs. Therefore it catches midwife or an obstetrician by surprise. The inability to deliver the shoulders after the delivery of the head creates panic situation in the labour room. One finds it difficult to recall the various manoeuvres described in textbooks for the delivery of impacted shoulders and starts pulling the head of the baby with considerable force leading to injuries to the neonate and the mother. The important risk factors are foetal macrosomia, gestational diabetes mellitus multiparity. The identification of risk factors for shoulder dystocia along with appropriate management may improve the ability to prevent brachial plexus injuries to the neonate.

### AIM:

The Aim of this study was to investigate the effectiveness of Mc Robert's Manoeuvre with suprapubic pressure for the management of Shoulder Dystocia.

### METHOD:

A retrospective study was conducted at MGM Medical College and Hospital, a tertiary care referral centre in Navi Mumbai, Maharashtra. The study was conducted over a period of 3 years from June 2015 to June 2018 and 25 cases of shoulder dystocia were selected from birth register and systematically analysed. The records were analysed for maternal weight, previous baby weight, and duration of pregnancy, presence of gestational diabetes mellitus, labour patterns, intrapartum complications and instrumental delivery. All cases of pregnancy less than 37 weeks of gestation, multiple gestations, breech presentation and previous caesarean delivery were excluded. Singleton pregnancy with cephalic presentation more than 37 weeks of gestation were included in the study.

Shoulder dystocia is defined as vaginal cephalic delivery that requires additional obstetric manoeuvres to deliver the shoulders after the head has delivered along with downward traction on head. Prolonged second stage was defined as labour more than one and half hours in multipara and more than two hours in primipara. Foetal morbidity included fractures, neurological damage or APGAR score less than 5 at 5 min. The maternal morbidity includes post-partum haemorrhage (PPH), perineal tears and vaginal tears. The new born was considered macrosomic if the birth weight was 3.5kg or more.

### RESULTS:

**Table 1- The incidence of Shoulder Dystocia among Vaginal deliveries**

Total vaginal deliveries with cephalic presentation From 2016-2019	Shoulder dystocia	%
6000	25	0.41%

**Table 2-Risk factors for Shoulder Dystocia**

Risk Factors	Number of Patients	Percentage
Diabetes	2	8%
Multiparity	10	40%
Obesity	2	8%
Postdates	6	24%
Previous History of Large Baby	5	20%

**Table 3 – Shoulder dystocia and outcome of various manoeuvres**

S.N	labour abnormalities	Vacuum/forceps	Manoeuvres	Weight of the baby	Birth injuries
1.	Prolonged 2 <sup>nd</sup> stage of labour	Vacuum	Failed McRoberts followed by traction on head	3.9kg	Brachial plexus injury

2	Prolonged 1 <sup>st</sup> and 2 <sup>nd</sup> stage	Forceps	Failed McRoberts followed by delivery of post shoulder	3.8	Brachia l plexus injury
3	Nil	Nil	Mc Roberts + suprapubic pressure (SP)	3.5	Nil
4	Prolonged 1 <sup>st</sup> and 2 <sup>nd</sup> stage	Forceps	Failed McRoberts followed by delivery of posterior shoulder	3.4	Brachia l Plexus injuries
5	Prolonged 1 <sup>st</sup> and 2 <sup>nd</sup> stage	Vacuum	Corkscrew	3.5	Nil
6	Prolonged 2 <sup>nd</sup> stage	Vacuum	Failed McRoberts delivery of posterior shoulder	3.6	Brachia l Plexus injuries
7	Nil	Nil	Mc Roberts + SP	3.2	Nil
8	Nil	Nil	Mc Roberts + SP	3.5	Nil
9	Prolonged 1 <sup>st</sup> and 2 <sup>nd</sup> stage	Forceps	Failed McRoberts, delivery of posterior shoulder	3.6	Brachia l palsy
10	Nil	Nil	McRoberts + SP	3.4	Nil
11	Nil	Nil	McRoberts + SP	3.2	Nil
12	Prolonged 2 <sup>nd</sup> stage	Vacuum	Traction on head, fundal pressure	3.4kg	Brachia l palsy
13	Prolonged 1 <sup>st</sup> and 2 <sup>nd</sup> stage	Forceps	Failed McRoberts + SP followed by delivery of posterior shoulder	3.6	Brachia l palsy
14	Prolonged 1 <sup>st</sup> and 2 <sup>nd</sup> stage	Vacuum	Corkscrew	3.7	Brachia l palsy
15	Nil	Nil	McRoberts + SP	3.5	Nil
16	Prolonged 1 <sup>st</sup> and 2 <sup>nd</sup> stage	Vacuum	Corkscrew	3.8	Nil
17	Prolonged 2 <sup>nd</sup> stage	Vacuum	Failed McRoberts + SP followed by delivery of posterior shoulder	4	Brachia l palsy
18	Nil	Nil	McRoberts + SP	3.5	Nil
19	Prolonged 1 <sup>st</sup> and 2 <sup>nd</sup> stage	Vacuum	Failed McRoberts followed by delivery of posterior shoulder	3.6	Nil
20	Prolonged 2 <sup>nd</sup> stage	Vacuum	Traction on head and fundal pressure	4	Brachia l palsy

21	Nil	Nil	McRoberts + SP	3.2	Nil
22	Prolonged 1 <sup>st</sup> and 2 <sup>nd</sup> stage	Vacuum	Corkscrew attempted, delivery of posterior shoulder	3.4	Brachia l palsy
23	Prolonged 2 <sup>nd</sup> stage	Vacuum	Failed McRoberts, traction on head, fundal pressure, delivery of posterior shoulder	3.9	Brachia l palsy
24	Nil	Nil	McRoberts + SP	3.5	Nil
25	Nil	Nil	McRoberts + SP	3.4	Nil

**Table 4 - Neonatal and Maternal complications among 25 patients with shoulder dystocia**

No.	Complications	Patients (n)	Percentage
<b>Neonatal</b>			
1.	Low 5 min APGAR Score	10	40%
2.	Neurological complications	9	36%
<b>Maternal</b>			
1.	Perineal tear 3rd degree	6	24%
2.	PPH	4	8%

#### DISCUSSION:

The study was conducted to investigate the effectiveness of Mc Roberts Manoeuvre combined with suprapubic pressure for the management of shoulder dystocia. The Mc Roberts maneuver involves flexion at hip joints and abduction of legs over the abdomen. This maneuver helps to increase the antero-posterior diameter of the maternal pelvis creating an adequate space for the delivery of the shoulder. The suprapubic pressure can be employed together with McRoberts' maneuver to improve success rates. The suprapubic pressure reduces the biacromial diameter of the baby and rotates the anterior shoulder into the oblique pelvic diameter. The shoulder is then free to slip underneath the symphysis pubis with the aid of routine traction.

The total of 6000 deliveries vaginal deliveries were conducted during this period and among these 25 cases of shoulder dystocia were identified giving incidence rate of 0.4%. (Table 1).

The incidence of shoulder dystocia is 0.3-1.1%.<sup>8</sup> Forty percent of our patients were multiparous and this result is in agreement with study conducted by Salvator Politi and Laura D.<sup>3</sup>

Obesity, diabetes, postdatism, history of previous large baby, were not the significant factors for prediction of shoulder dystocia, in our study.(Table 2) Previous shoulder dystocia is widely quoted as risk factor for shoulder dystocia. However, none of our patients gave history of recurrent shoulder dystocia. As the labor progresses, certain abnormalities of dilatation and descent give signal of further risk due to its association with fetal macrosomia and cephalo-pelvic disproportion.<sup>5</sup> The prolonged 1<sup>st</sup> stage of labor was present in 8 patients (32%) and prolonged 2<sup>nd</sup> stage in 4 (24%) patients. (Table 3) The instrumental delivery was conducted in all the patients with 2<sup>nd</sup> stage arrest. The results of our study are in agreement with Aucker et al who have concluded that protracted labor and arrest disorders are associated with shoulder dystocia.<sup>4</sup> Beneditti and Gabbe<sup>1</sup> also said that prolonged second stage of labor and mid cavity forceps are risk factors for shoulder dystocia. The Mc Roberts maneuver was used in 16 cases and was successful in 10 patients (40%).

There was no neurological injury in any of the ten cases where McRoberts maneuver with suprapubic pressure were successful. This result in agreement with studies conducted with German and Goodwin<sup>5</sup>.

A total of eleven cases of brachial palsy were noted (44%) out of which five cases (45%) were delivered with fundal pressure and delivery of posterior shoulder. Three patient (27%) delivered by fundal pressure and traction on head and one case delivered with corkscrew maneuver.(Table 4) All neurological injuries were seen in cases where maneuvers like corkscrew and posterior shoulder delivery were used. Gherman et al suggested lower rates of brachial plexus injury with Mc Roberts maneuver.<sup>2</sup> It has been seen that there is lower risk of brachial plexus injury with Mc Roberts Maneuvers combined with suprapubic pressure, compared with other maneuvers, traction on fetal head or fundal pressure.<sup>6</sup>

#### CONCLUSION:

Shoulder Dystocia is infrequent but is often associated with serious consequences. Early and correct diagnosis and optimal management of Shoulder Dystocia prevents permanent neurological consequence. The data suggests that Mc Roberts Manoeuvre combined with suprapubic pressure, is associated with significant degree of success in relieving shoulder dystocia. This combination of manoeuvres is associated with decreased morbidity to mother and the foetus as compared to other manoeuvres. Therefore the Mc Roberts manoeuvre with suprapubic pressure as the initial technique for disimpaction of anterior shoulder is recommended.

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