# SHOULDER DYSTOCIA

## DEFINITION

Shoulder dystocia is defined as a birth which requires additional manoeuvres to release the shoulders after gentle downward traction has failed[1].

It occurs due to impaction of the anterior shoulder against the maternal symphysis pubis, or less commonly the posterior shoulder impacted against the sacral promontory [2].

## INCIDENCE

Incidences of 0.58% to 0.7% vaginal births have been reported.[1]

## RISK FACTORS

The following antenatal and intrapartum characteristics have been reported to be associated with shoulder dystocia[4]:

**Pre-labour**

- Fetal macrosomia*
- Maternal BMI > 30kg/m2
- Diabetes
- Induction of Labour
- Previous shoulder dystocia

**Intrapartum**

- Prolonged first stage
- Secondary arrest in labour
- Prolonged second stage
- Oxytocin augmentation
- Assisted vaginal birth

*Although there is a link between fetal size and shoulder dystocia, 48% of incidences occur in infants with a birth weight less than 4000g[2]

Shoulder dystocia is often an unpredictable and unpreventable event. The large majority of cases occur in the infants of women with no risk factors. In cases of shoulder dystocia resulting in infant morbidity, only 16% had identified risk factors[1].

## COMPLICATIONS

Shoulder dystocia is an obstetric emergency that may lead to complications for both the woman and her baby including:

**Maternal**

- Genital tract trauma
  - Increased rates of 3rd and 4th degree tears
  - Uterine rupture
- Symphysial separation
- Postpartum haemorrhage
- Psychological distress/trauma

**Neonatal**

- Brachial plexus injuries (e.g. Erb's, Klumpke's palsies)
- Clavicular & humeral fractures
- Fetal acidosis/hypoxia may lead to permanent neurological damage
- Fetal/neonatal death

Regular training for all health professionals attending births is essential for the reduction of these complications[1].

## PREVENTION

In cases of suspected macrosomia:

- Without diabetes: Elective caesarean section is NOT indicated
- With diabetes: Elective caesarean section may be considered following discussion with consultant obstetrician

In cases of maternal diabetes:

- Maintain tight glycaemic control
- Monitor weight gain during preconception and pregnancy care

In cases of previous shoulder dystocia:

- Either caesarean section or vaginal birth is appropriate in women, taking into consideration the severity of previous shoulder dystocia (eg: manoeuvres required, maternal trauma and neonatal morbidity), fetal size in this pregnancy and maternal choice.

## RECOGNITION

- Prolonged second stage
- Head comes down to introitus with pushing but retracts back between contractions – "Head Bobbing"
- Delivered head retracts back into vagina - "Turtle" sign
- Delayed restitution of fetal head
- Gentle traction does not free the shoulder

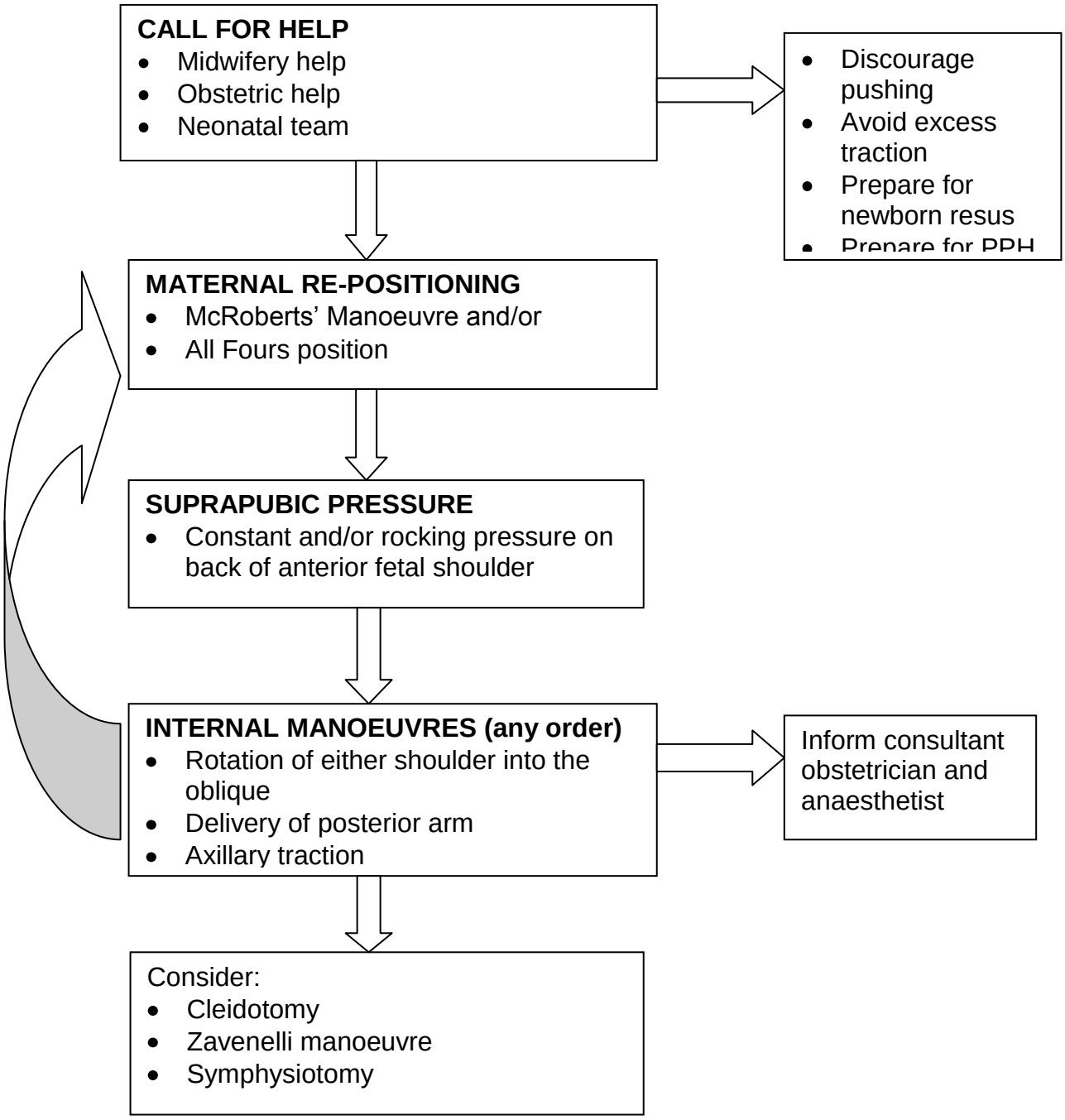
## MANAGEMENT

**Flowchart for the management of shoulder dystocia is included below.**

This flowchart begins with simple measures and leads to more invasive manoeuvres. The order of these actions may differ according to clinical circumstances (e.g. experience of birth attendants, maternal ability to change position, existing or available analgesia/anaesthesia)

Do not delay. Fetal hypoxia will worsen the longer the delay between the birth of the head and the birth of the body (approximate drop in blood pH of 0.04 per minute).

## Flowchart for the management of shoulder dystocia



The flowchart is consistent with the H.E.L.P.E.R.R. mnemonic in Appendix 1, taught as part of the Advanced Life Support in Obstetrics (ALSO) course[3]

The aim of each of the actions in the flowchart is to:

- Increase functional size of bony pelvis
- Dislodge fetal shoulder due to pelvic movement
- Decrease fetal bisacromial diameter by adduction of shoulders
- Change relationship of bisacromial diameter with the bony pelvis (i.e rotate)
- Allow more space for internal manoeuvres to be performed

Each action in the flowchart is described in more detail below:

**1. Call for Help/Initial Actions**

- Press emergency buzzer
- Request additional assistance for manoeuvres
- Prepare for neonatal resuscitation and PPH
- Discourage maternal pushing
- Avoid excessive traction on fetal head

**In secondary/ tertiary unit**

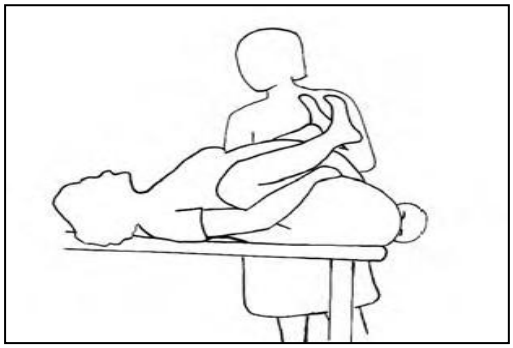
Fast page on 777 - neonatal team, obstetric team and anaesthetic team

**In primary unit**

Fast page on 777 - clinical co-ordinator (CCO) and/or obstetric team
Dial 111 for ambulance and state "Code One" (lights and siren)

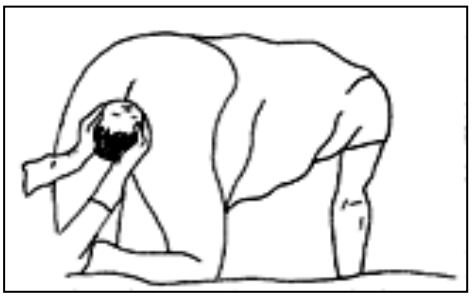
**2. Maternal Re-positioning**

- McRoberts' Manoeuvre (bed flat, buttocks to edge of bed and move knees towards shoulders) and/or



(Ref. Crofts et al.)

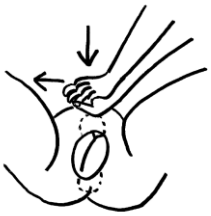
- All fours position



(Ref. PROMPT manual)

### 3. Suprapubic Pressure

- Determine position of fetal back
- Place hands in "CPR" position
- Apply downward and lateral pressure to posterior aspect of anterior shoulder to displace shoulder from behind symphysis pubis and rotate into the oblique position
- Provide constant and/or rocking pressure



### 4. Internal Manoeuvres (any order)(with Episiotomy if required)

**Internal rotation**[4&5]
Insert fingers posteriorly
Apply pressure to fetal shoulder(s) in order to rotate in a clockwise or anticlockwise direction

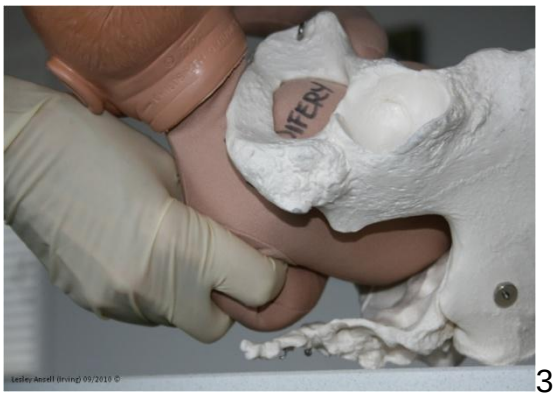
**Delivery of posterior arm**
Insert fingers posteriorly, slide hand along fetal arm and bend it at the elbow.
Sweep arm across chest and over face.

(Ref. Crofts et al)

## Axillary Traction


1. Slide hand along fetal neck to shoulder


2. Grasp axilla with thumb and first finger


3. Apply axillary traction – follow curve of sacrum

(Photos used with permission of Lesley Ansell[6])

## 5. Further intervention

### Cleidotomy

- Upward pressure with finger onto the baby's clavicle to cause a fracture

### Zavanelli Manoeuvre

- Cephalic replacement followed by emergency caesarean delivery
- Flex fetal head to replace
- Acute tocolysis will be required

### Symphysiotomy

- Used primarily in developing nations
- Local anaesthetic injected over symphysis
- Insert a Foley catheter
- Vaginal hand displaces urethra laterally
- Skin incision down to symphysis
- Scalpel blade to cut ligaments
- Assistant should support the pelvis on either side to prevent excessive traction
- Symphysis will then spread, allowing delivery.

# POSTPARTUM CARE

1. Active management of 3rd stage.
2. Thorough examination for perineal and cervical injury.
3. Ensure adequate pain relief.
4. Debrief the woman and her family/whanau and birth attendants.
5. Ensure appropriate neonatal follow-up in accordance with neonatal handbook.

## DOCUMENTATION

The shoulder dystocia documentation form (Ref: **6775 )** must be completed following the birth of the baby (see Appendix 2)

Complete and submit incident report form.

## SUMMARY

- **Shoulder dystocia is a life-threatening situation**
- **Recognise risk factors and be alert at every birth**
- **Declare an emergency**
- **Stay calm and focussed**
- **Work through flowchart or mnemonic**
- **Record management and timing of events on procedural record**

## REFERENCES

1. **Crofts, J., Draycott, T, Montague, I. Winter, C. & Fox, R.** (2012) Royal College of Obstetricians & Gynaecologists (RCOG) Greentop Guideline 42 - Shoulder Dystocia; 2nd edition www.rcog.org.uk
2. **Baskett T. & Allen, A.** (1995) Perinatal Implications of Shoulder Dystocia. *Obstet Gynaecol*; **86**; 14-17
3. **Gobbo E. & Baxley E**. (2000) Shoulder Dystocia *American Academy of Family Physicians Advanced Life Support in Obstetrics (ALSO), 4th Edition*
4. Rubin A. Management of shoulder dystocia. *JAMA* 1964; 189:835-7.
5. Woods CE, Westbury NYA. Aprinciple of physics as applicable to shoulder delivery. Am J Obstet Gynecol 1943;45:796-804.
6. **Ansell (Irving), L., McAra-Couper, J. & Smythe, E.** (2011) Shoulder Dystocia. A qualitative exploration of what works. *Midwifery*. Doi.: 10.1016/j.midw.2011.05.007

# APPENDIX 1

## Mnemonic for the management of shoulder dystocia

### H E L P E R R mnemonic

**H** = Help (call for additional assistance)

**E** = Evaluate for episotomy

**L =** Legs (McRoberts' manoeuvre)

**P** = Pressure (Suprapubic)

**E** = Enter (Internal manoeuvres)

**R** = Remove (Posterior arm)

**R** = Roll (to hands & knees)

(A.L.S.O Advanced Life Support in obstetrics, 1996)

- Always call for help first
- Remaining HELPERR mnemonic can be followed in any order, using least invasive manoeuvres first

# APPENDIX 2

Canterbury District Health Board
Te Poari Hauora ō Waitaha
Christchurch Women's Hospital
Maternity Services

SURNAME .....NHI: .....
FIRST NAME: .....DOB: .....
ADDRESS: .....
..... POST CODE: ..... *(or affix patient label)*

## SHOULDER DYSTOCIA

| Called for help at: | | | | |
|---|---|---|---|---|
| Staff present at delivery of head: | | Additional staff attending for delivery of shoulders: | | |
| Name | Role | Name | Role | Time Arrived |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| Procedures used to assist delivery | By whom | Time | Order | Comments |
|---|---|---|---|---|
| Maternal repositioning | | | | |
| Suprapubic pressure | | | | |
| Episiotomy | | | | |
| Internal rotation | | | | |
| Delivery of posterior arm | | | | |
| Axillary traction | | | | |
| Other manoeuvres used: | | | | |

| Mode of delivery of head: ☐ Spontaneous ☐ Instrumental | | |
|---|---|---|
| Time of delivery of head: | Time of delivery of baby: | Head-to-body delivery interval: |
| Fetal position during dystocia: | ☐ Head facing maternal **left** (i.e. left fetal shoulder anterior) | |
| | ☐ Head facing maternal **right** (i.e.right fetal shoulder anterior) | |
| Birth weight:_____kg | Apgar: 1 min: 5 mins: 10 mins: | |

| **Cord gases:** | **pH** | **Base Excess** | **Lactate** |
|---|---|---|---|
| Arterial | | | |
| Venous | | | |
| Explanation to woman and family/whanau | By:_____ | | |

| **Initial Neonatal Assessment:** | | | Comments: |
|---|---|---|---|
| Any sign of arm weakness? | Yes | No | |
| Any sign of potential bony fracture? | Yes | No | |
| Referred for neonatal team review? | Yes | No | |
| Baby admitted to Neonatal Intensive Care Unit (NICU) | Yes | No | |
| Name: | Date: | | |
| Signature: | Designation: | | |

Ref. 6775 Page 1 of 1 Issued: September 2012
Authorised By: Clinical Director, O&G, Director of Midwifery

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