# Clinical Guideline for: The Management of Shoulder Dystocia

For Use in: Maternity Care

By: Midwives and Medical Staff

For: Management of shoulder dystocia

Division responsible for document: Womens and Childrens

Key words: Shoulder dystocia; brachial plexus injury (BPI); risk factors; management

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Assessed and approved by the: Maternity Guidelines Committee (MGC)

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Date to be reviewed: 23/07/2021

To be reviewed by: Julie Mansfield

Anna Haestier

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Version No: 5

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Compliance links: (is there any NICE related to guidance) No

If Yes - does the strategy/policy deviate from the recommendations of NICE? If so why? N/A
Quick reference guideline: Algorithm for management of shoulder dystocia

CALL FOR HELP
Midwife coordinator, additional midwifery help, experienced obstetrician, neonatal team

Discourage pushing
Move buttocks to edge of bed

MCROBERTS’ MANOEUVRE
(thighs to abdomen)

SUPRAPUBIC PRESSURE
(and routine traction)

Consider episiotomy if it will make internal manoeuvres easier

Try either manoeuvre first depending on clinical circumstances

DElIVER POSTERIOR ARM

INTERNAL ROTATIONAL MANOEUVRES

Inform consultant obstetrician and anaesthetist

If above manoeuvres fail to release impacted shoulders, consider ALL-FOURS POSITION (if appropriate) OR
Repeat all the above again

Consider cleidotomy, Zavanelli manoeuvre or symphysiotomy

Baby to be reviewed by neonatologist

DOCUMENT ON PRO FORMA AND COMPLETE CLINICAL INCIDENT REPORTING FORM
Objective

To provide clear guidance on the effective management of shoulder dystocia based on current available evidence.

Rationale

Shoulder dystocia is diagnosed when the shoulders fail to deliver by gentle downward traction following the birth of the head. Shoulder dystocia occurs when the fetal shoulders fail to rotate into a transverse position - the problem is at the pelvic inlet rather than at the outlet. It is an uncommon occurrence but potentially a serious complication of vaginal delivery. It occurs 1% of vaginal births. In the most severe cases it may be associated with stillbirth or neonatal death or long-term morbidity from birth asphyxia or to brachial plexus injury (BPI). Guidance on risk factors and standards for management and record keeping are therefore imperative. A high level of awareness and training is also required for those attending births.

Broad recommendations

Risk factors associated with shoulder dystocia

A number of antenatal and intrapartum risk factors have been associated with shoulder dystocia but even a combination of these is poorly predictive. Obstetric medical staff and midwives should therefore be alert to the possibility of shoulder dystocia in all vaginal births. However, when significant antepartum risk factors are identified, these should be highlighted to the on-call obstetric team and coordinating midwife, and an experienced obstetrician, of at least SpR level (ST3 or above), would be expected to available on Delivery Suite in the second stage prepared for any shoulder dystocia that may arise.

<table>
<thead>
<tr>
<th>RISK FACTORS FOR SHOULDER DYSTOCIA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antenatal</strong></td>
</tr>
<tr>
<td>Previous shoulder dystocia</td>
</tr>
<tr>
<td>Macrosomia &gt;4.5kg</td>
</tr>
<tr>
<td>Maternal diabetes mellitus</td>
</tr>
<tr>
<td>Maternal BMI &gt; 30</td>
</tr>
<tr>
<td>Induction of labour</td>
</tr>
</tbody>
</table>

Obstetric medical staff and midwives must be familiar with the procedure for summoning help, the manoeuvres to be employed in the event of shoulder dystocia (summarized in the quick reference guideline) and the standards for record keeping (see Record keeping chart – appendix).
Acker et al. (1985) reviewed 14,721 births in non-diabetic mothers and reported the following rates of shoulder dystocia.

<table>
<thead>
<tr>
<th>Birthweight</th>
<th>Incidence of shoulder dystocia</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 4000g</td>
<td>1%</td>
</tr>
<tr>
<td>4000-4499g</td>
<td>10%</td>
</tr>
<tr>
<td>4500 or more</td>
<td>23%</td>
</tr>
</tbody>
</table>

However, macrosomia remains only a weak predictor as the large majority of infants with a birth weight of > 4500g do not develop shoulder dystocia and in addition up to 50% of shoulder dystocia occurs in infants weighing < 4000g (Naef and Martin, 1995, Baskett and Allen, 1995). This is further compounded by difficulty in detecting macrosomia by ultrasound scans. Rouse and Owen (1999), reported a 10% margin for error of birth weight and failure to detect 40% of infants over 4500g.

Maternal diabetes is a risk factor. Maternal Diabetes increases the risk of shoulder dystocia (Nesbit et al, 1998). Infants of diabetic mothers were three to four times more likely to experience shoulder dystocia compared with infants of the same birth weight born to non-diabetic mothers. (Acker et al.1985).

Induction of labour can reduce the incidence of shoulder dystocia in women with gestational diabetes.

Elective caesarean section should be considered to reduce the potential morbidity for pregnancies complicated by pre-existing or gestational diabetes, regardless of treatment, with an estimated fetal weight of >4.5kg

**Signs of shoulder dystocia**

All birth attendants routinely look for signs of shoulder dystocia and include:

- Difficulty with delivery of the face and chin
- The head tightly applied to the vulva or retracting i.e. the ‘turtle neck sign’
- Failure of restitution of the fetal head
- Failure of the shoulders to descend

**SYSTEMATIC EMERGENCY MANAGEMENT OF SHOULDER DYSTOCIA**

**Don’t panic.** There is plenty of time - serial scalp pH between delivery of the head and trunk falls relatively slowly (0.2 unit/5 mins) provided the baby is not compromised. Excessive traction may cause BPI and any fundal pressure further impacts the shoulders.

**Get help immediately!**

**Call 2222** - State ‘Obstetric Emergency’ and ‘Shoulder Dystocia’, and give location.

You need the most experienced midwife and obstetrician immediately available and a neonatologist for resuscitation.

Explain complication to mother – STOP pushing at this stage
Move woman’s buttocks to end of bed

Don’t panic – pH falls by 0.04 per minute.

McRoberts’ manoeuvre

Remove pillows, sharply flex, abduct and externally rotate the legs so the thighs touch the sides of mother’s abdomen - get two assistants

(lithotomy position is NOT sufficient).

Attempt gentle traction.

Lateral suprapubic pressure

Suprapubic pressure by an assistant- (NOT fundal pressure)

Lateral pressure from side of fetal back reduces bisacromial diameter and encourages shoulders to rotate into the wider oblique diameter.

Pressure is applied in a downward and lateral direction just above the symphisis pubis.

Continuous or intermittent pressure – there is no evidence that one method is superior to the other or that it should be more than briefly.

Attempt gentle traction.

Consider Episiotomy

Shoulder dystocia is caused by bony obstruction at the pelvic inlet but episiotomy creates more room posteriorly and permits easier access if hands have to enter pelvis.

Internal rotational manoeuvres

The clinician should select the appropriate manoeuvre based on the clinical situation and his/her experience - either removal of posterior arm of internal rotational manoeuvres.

Place a hand in the vagina posteriorly where there is more space - attempt to rotate the posterior shoulder into the oblique. If successful apply gentle traction to the head.

Otherwise consider ‘reverse rotation’ then apply gentle traction to the head if successful.

Suprapubic pressure as above can be used to support these manoeuvres but it must be in the appropriate direction and co-ordinated with internal rotation.

Deliver posterior arm

If the fetal wrist is accessible attempt to draw posterior arm over the baby’s face.

Delivering the posterior arm will reduce the diameter of the shoulders by an arm width, providing enough space to resolve the dystocia, allowing delivery to be completed by moderate traction.
If the wrist is not immediately accessible the arm can be flexed by placing a thumb in the antecubital fossa and gentle grasping the elbow. Pulling on the upper arm is associated with humeral fracture

**Ask patient to get onto all fours.**

Change of position may free the shoulders.

**Start again**

If the above manoeuvres have failed to allow birth

**Failure of first and second line manoeuvres: what measures should be taken?**

Third-line manoeuvres should be considered very carefully to avoid unnecessary maternal morbidity. There is no time limit to suggest, but there appears to be a very low rate of hypoxic brain injury up to five minutes.

Third line manoeuvres include:-

- Zavenelli manoeuvre- vaginal replacement of the head and then delivery by caesarean section.
- Cleidotomy- surgical division of the clavicle or bending with a finger.
- Symphysiotomy- dividing the anterior fibres of the symphyseal ligament.

**Postnatal management**

Cord gases should be taken for acid-base analysis. Post-partum haemorrhage should be anticipated, with steps taken to avoid this such as active management of the third stage and a low threshold for post-partum syntocinon infusion and other oxytocic drugs. The maternal perineum should be thoroughly assessed to check the extent of perineal trauma (in some cases this may require regional anaesthesia and/or assessment in theatre prior to commencing suturing). All women whose delivery is complicated by shoulder dystocia should be debriefed about the course of events.

**Process for follow up of the newborn**

All babies delivered following shoulder dystocia should be carefully examined by an experienced neonatologist before discharge. Follow up of the newborn where there is actual or suspected brachial plexus injuries will be arranged by the neonatologists prior to discharge who will also refer to tertiary specialist services, if required. Brachial plexus injury complicated 2.3% -16% of cases of shoulder dystocia. Other injuries the accoucheur should be aware of include fractures to the clavicle and humerus, pneumothoraces and hypoxic brain damage.

**Future deliveries**

Either caesarean section or vaginal delivery can be appropriate after a previous shoulder dystocia. The decision should be made jointly by the woman and her health care professionals.

**Standards for record keeping**

Comprehensive and accurate record keeping is essential in all cases of shoulder dystocia. Details of the emergency must be recorded in the maternal notes. Ensure you re-
Clinical Guideline for: The Management of Shoulder Dystocia

cord clearly who was present (and who was called), the time they attended, the man-
euvres performed, whether it was the left or right shoulder which was impacted, delivery
time of the head and the completed delivery, Apgar scores and cord pHs.

The Shoulder dystocia proforma (appendix 1). The chart should be filed in the maternal
health records and an electronic incident report made.

**Maternity services expectations for staff training.**

Refer to maternity Training Needs Analysis (TNA)

**Clinical audit standards**

The Maternity Services are committed to the philosophy of clinical audit, as part of its
Clinical Governance programme. This standards contained in this clinical guideline will
be subject to continuous audit, with multidisciplinary review of the audit results at one of
the monthly departmental Clinical Governance meetings. The results will also be
summarised and a list of recommendations formed into an action plan, with a
commitment to re-audit within three years, resources permitting.

Auditable standards derived from this guideline:

- Shoulder dystocia proforma (appendix 1) to be used in all cases of shoulder
dystocia (Standard 100%, exceptions – none).
- All midwives and Medical Staff in training should have attended a skills/drills
  session on shoulder dystocia within the previous year (Standard 100%,
  exceptions – none).
- The Risk Management Team to be informed urgently of all cases of suspected
  or actual BPI (Standard 100%, exceptions – none).
- Incident reporting of all shoulder dystocias.

Summary of development and consultation process undertaken before registration and
dissemination

The authors listed above drafted this guideline on behalf of the Obstetric & Gynaecology
Guidelines Group who has agreed the final content.

**Distribution list/ dissemination method**

Trust Intranet

**References/ source documents**

1. Acker DB, Sachs BP, Friedman EA. Risk factors for shoulder dystocia. Obstet Gyn-
stetrics. 4th Ed. Module I, Shoulder Dystocia.
3. Baskett T. Shoulder dystocia. Bailliere’s Best Practice & Research Clinical obstet-
rics & Gynaecology 2002; 16(1):57-68.
1995; 86:14-17.
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# Shoulder Dystocia Proforma

## Date
**dd/mm/yyyy**

## Time
24 hours clock

## Consultant

## Person completing form (scribe)

<table>
<thead>
<tr>
<th>Print name</th>
<th>Signature</th>
<th>Designation</th>
<th>Date dd/mm/yyyy</th>
</tr>
</thead>
</table>

## Personnel present at diagnosis

<table>
<thead>
<tr>
<th>Print name</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

## Call for help

<table>
<thead>
<tr>
<th>Print name</th>
<th>Designation</th>
<th>Tick when actioned</th>
<th>Time actioned as appropriate 24 hour clock</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Emergency ‘2222’ call via switchboard

## Staff present at delivery of head:

<table>
<thead>
<tr>
<th>Print name</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

## Additional staff attending for delivery of shoulders

<table>
<thead>
<tr>
<th>Print name</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

## Maternal position at delivery of head

- **Semi recumbent**
- **Lithotomy**
- **Side lying**
- **All fours**
- **Kneeling**
- **Standing**
- **Squatting**
- **Other**

## Mode of delivery of head

- **Spontaneous**
- **Instrumental – vacuum**
- **forceps**

## Time of delivery of head

**24 hour clock**

## Time of delivery of baby

**24 hour clock**

## Head-to-body delivery interval:

**24 hour clock**

## Fetal position during dystocia:

- **Head facing maternal**
- **Left fetal shoulder anterior**
- **Right fetal shoulder anterior**

## Procedures used to assist delivery

<table>
<thead>
<tr>
<th>Performed by Print name</th>
<th>Time 24 hour clock</th>
<th>Order</th>
<th>Details or tick as appropriate</th>
<th>Subsequent attempts by Print name</th>
</tr>
</thead>
<tbody>
<tr>
<td>McRoberts’ position:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suprapubic pressure:</td>
<td></td>
<td></td>
<td>From maternal</td>
<td></td>
</tr>
<tr>
<td>Consider Episiotomy:</td>
<td></td>
<td></td>
<td>Enough access</td>
<td></td>
</tr>
<tr>
<td>Delivery of posterior arm:</td>
<td></td>
<td></td>
<td>Right arm</td>
<td></td>
</tr>
<tr>
<td>Internal rotation manoeuvre:</td>
<td></td>
<td></td>
<td>Left arm</td>
<td></td>
</tr>
<tr>
<td>Description of rotation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description of traction:</td>
<td>Routine axial (as in normal vaginal delivery)</td>
<td>Other: detail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reason if not routine axial:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Other manoeuvres used: **detail**
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## Shoulder Dystocia Proforma

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Patient Identifier Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>dd/mm/yyyy</td>
<td>24 hours clock</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consultant</th>
<th>Print name</th>
<th>Signature</th>
<th>Designation</th>
<th>Date dd/mm/yyyy</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Person completing form (scribe)</th>
<th>Print name</th>
<th>Signature</th>
<th>Designation</th>
<th>Date dd/mm/yyyy</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Birth</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Birth weight Kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Apgars @ 1 min:</td>
<td>5 min:</td>
<td>10 min:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cord gases:</th>
<th>Arterial pH:</th>
<th>Arterial BE:</th>
<th>Venous pH:</th>
<th>Venous BE:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Parents</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Explanation to parents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explanation by</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-print name and designation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incident form</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Incident form completed</td>
<td>Yes</td>
<td>No</td>
<td>If yes - Datix reference</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Neonatologist called</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Neonatologist called</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Print name of the Neonatologist who attended and time of arrival</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If Neonatologist not called or did not arrive - give reason:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Baby assessment after birth</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(may be done by RM):</td>
<td>Any sign of arm weakness?</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Any sign of potential bony fracture?</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Baby admitted to Neonatal Intensive Care unit?</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Person completing Assessment</th>
<th>Print name</th>
<th>Signature</th>
<th>Designation</th>
<th>Date dd/mm/yyyy</th>
<th>Time 24 hours clock</th>
</tr>
</thead>
</table>

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Author/s title: Practice Development Midwife, Consultant

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