

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 Children's
Key words:	Shoulder dystocia; brachial plexus injury (BPI); risk factors; management
Name of document author:	Julie Mansfield
Job title of document author:	Practice Development Midwife
Name of document author's Line Manager:	Anna Haestier
Job title of author's Line Manager:	Chief of Maternity Services
Supported by:	Mr David Fraser, Mr Alastair McKelvey
Assessed and approved by the:	Maternity Guidelines Committee (MGC) If approved by committee or Governance Lead Chair's Action; tick here <input checked="" type="checkbox"/>
Date of approval:	08 July 2021
Ratified by or reported as approved to (if applicable):	Clinical Safety and Effectiveness Sub-Board
To be reviewed before: This document remains current after this date but will be under review	08 July 2024
To be reviewed by:	Julie Mansfield
Reference and / or Trust Docs ID No:	IO31 – ID No: 888
Version No:	6
Compliance links: <i>(is there any NICE related to guidance)</i>	RCOG Green Top Guideline 42 https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg42/
If Yes - does the strategy/policy deviate from the recommendations of NICE? If so why?	Compliant with RCOG

Clinical Guideline for: The Management of Shoulder Dystocia

Version and Document Control:

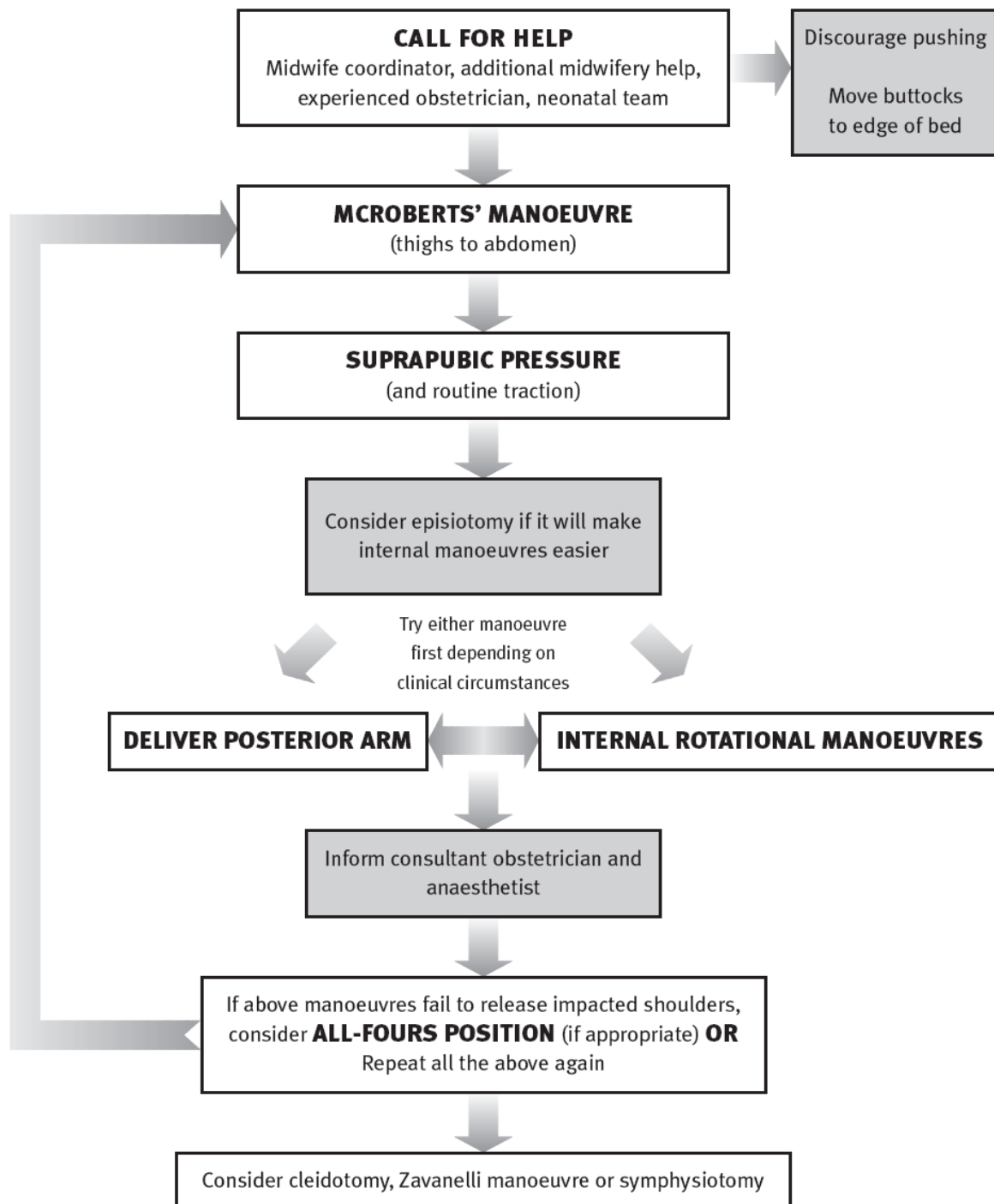
Version Number	Date of Update	Change Description	Authors
6	08/07/2021	Line Manager amended and RCOG links replaced.	Julie Mansfield Anna Haestier

This is a Controlled Document

Printed copies of this document may not be up to date. Please check the hospital intranet for the latest version and destroy all previous versions.

Clinical Guideline for: The Management of Shoulder Dystocia

Quick reference guideline: Algorithm for management of shoulder dystocia



Baby to be reviewed by neonatologist

DOCUMENT ON PRO FORMA AND COMPLETE CLINICAL INCIDENT REPORTING FORM

Clinical Guideline for: The Management of Shoulder Dystocia

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 be available on Delivery Suite in the second stage prepared for any shoulder dystocia that may arise.

RISK FACTORS FOR SHOULDER DYSTOCIA	
Antenatal	Intrapartum
Previous shoulder dystocia	Prolonged first stage
Macrosomia >4.5kg	Secondary arrest
Maternal diabetes mellitus	Prolonged second stage
Maternal BMI > 30	Oxytocin augmentation
Induction of labour	Assisted vaginal delivery

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).

Clinical Guideline for: The Management of Shoulder Dystocia

Macrosomia as a risk factor

Acker et al. (1985) reviewed 14,721 births in non-diabetic mothers and reported the following rates of shoulder dystocia.

Birthweight	Incidence of shoulder dystocia
< 4000g	1%
4000-4499g	10%
4500 or more	23%

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 minutes) 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.

Clinical Guideline for: The Management of Shoulder Dystocia

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 symphysis 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.

Clinical Guideline for: The Management of Shoulder Dystocia

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

Clinical Guideline for: The Management of Shoulder Dystocia

Author/s: J. Mansfield

Approved by: MGC

Available via Trust Docs

Version: 6

Author/s title: Practice Development Midwifent

Date approved: 08/07/2021

Trust Docs ID: 888

Review date: 08/07/2024

Page 7 of 11

Clinical Guideline for: The Management of Shoulder Dystocia

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 record clearly who was present (and who was called), the time they attended, the manoeuvres 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 Maternity Guidelines Committee who has agreed the final content.

Distribution list / dissemination method

Trust Intranet

Clinical Guideline for: The Management of Shoulder Dystocia

References / source documents

1. Acker DB, Sachs BP, Friedman EA. Risk factors for shoulder dystocia. *Obstet Gynecol* 1985; **66**:762-8.
2. American Academy of Family Physicians (2000). *Advanced Life Support in Obstetrics*. 4th Ed. Module I, Shoulder Dystocia.
3. Baskett T. Shoulder dystocia. *Bailliere's Best Practice & Research Clinical obstetrics & Gynaecology* 2002; **16(1)**:57-68.
4. Baskett TF, Allen AC. Perinatal implications of shoulder dystocia. *Obstet Gynecol* 1995; **86**:14-17.
5. Naef RW 3rd, Martin JN Jr. Emergent management of shoulder dystocia, *Obstet Gynecol Clin North Am* 1995; **22**:247-259 .
6. Nesbitt TS, Gilbert WM, Herchen B. Shoulder dystocia and associated risk factors with macrosomic infants born in California. *Am J Obstet Gynecol* 1998;**179**:476-80.
7. Rouse DJ, Owen J. Prophylactic cesarean delivery for fetal macrosomia diagnosed by means of ultrasonography: a Faustian bargain? *Am J Obstet Gynecol*1999; **181**: 332-8.
8. Royal College of Obstetricians & Gynaecologists. Greentop guideline no 42. *Shoulder Dystocia*. March (2012); RCOG Press, London. <http://www.rcog.org.uk>
9. Royal College of Obstetricians & Gynaecologists (2008) *Practical Obstetric Multi-Professional Training – Course Manual*.

Shoulder Dystocia Proforma								
Date <i>dd/mm/yyyy</i>		Time <i>24 hours clock</i>						
Consultant								
Person completing form (scribe)	<i>Print name</i>	<i>Signature</i>	<i>Designation</i>	<i>Date dd/mm/yyyy</i>				
Personnel present at diagnosis	<i>Print name</i>	<i>Designation</i>						
Call for help			<i>Tick when actioned</i>	<i>Time actioned as appropriate 24 hour clock</i>				
Emergency '2222' call via switchboard			<input type="checkbox"/>					
Staff present at delivery of head:	<i>Print name</i>	<i>Designation</i>						
Additional staff attending for delivery of shoulders	<i>Print name</i>	<i>Designation</i>						
Maternal	Semi recumbent	Lithotomy	Side lying	All fours	Kneeling	Standing	Squatting	Other <i>describe</i>

Clinical Guideline for: The Management of Shoulder Dystocia

position at delivery of head <i>tick</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mode of delivery of head	Spontaneous <input type="checkbox"/> Instrumental – vacuum <input type="checkbox"/> forceps <input type="checkbox"/>						
Time of delivery of head <i>24 hour clock</i>			Time of delivery of baby <i>24 hour clock</i>			Head-to-body delivery interval: <i>24 hour clock</i>	
Fetal position during dystocia:	Head facing maternal Left fetal shoulder anterior <input type="checkbox"/>				Head facing maternal Right fetal shoulder anterior <input type="checkbox"/>		

Procedures used to assist delivery	Performed by Print name	Time 24 hour clock	Order	Details or tick as appropriate	Subsequent attempts by Print name
McRoberts' position:					
Suprapubic pressure:				From maternal Left <input type="checkbox"/> Right <input type="checkbox"/>	
Consider Episiotomy:				Enough access <input type="checkbox"/> Tear present <input type="checkbox"/> Already performed <input type="checkbox"/>	
Delivery of posterior arm:				Right arm <input type="checkbox"/> Left arm <input type="checkbox"/>	
Internal rotation manoeuvre:					
Description of rotation:					
Description of traction:		Routine axial (as in normal vaginal delivery) <input type="checkbox"/>		Other: <i>detail</i>	
Reason if not routine axial:					
Other manoeuvres used: <i>detail</i>					

Shoulder Dystocia Proforma				<i>Patient Identifier Label</i>
Date <i>dd/mm/yyyy</i>		Time <i>24 hours clock</i>		
Consultant				

Person completing form (scribe)	Print name	Signature	Designation	Date dd/mm/yyyy

Birth			
Birth weight		Kg	
Apgars @		1 min:	5 min: 10 min:
Cord gases:	Arterial pH:	Arterial BE:	Venous pH: Venous BE:

Parents	Tick when actioned	Time actioned as appropriate 24 hour clock
Explanation to parents	<input type="checkbox"/>	
Explanation by <i>-print name and designation</i>		
Incident form	Tick as appropriate	Time actioned as appropriate 24 hour clock
Incident form completed	Yes <input type="checkbox"/> No <input type="checkbox"/> <i>If yes - Datix reference</i>	
Neonatologist called	Tick when actioned	Time actioned as appropriate 24 hour clock

Clinical Guideline for: The Management of Shoulder Dystocia

Neonatologist called		<input type="checkbox"/>
Print name of the Neonatologist who attended and time of arrival		
If Neonatologist not called or did not arrive - give reason:		
Baby assessment after birth <i>(may be done by RM):</i>		<i>Tick as appropriate</i>
Any sign of arm weakness?	Yes <input type="checkbox"/> No <input type="checkbox"/>	If 'yes' to any of these questions: - for review and follow up by Consultant Neonatologist.
Any sign of potential bony fracture?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Baby admitted to Neonatal Intensive Care unit?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Person completing Assessment	<i>Print name</i>	
	<i>Signature</i>	
	<i>Designation</i>	
	<i>Date dd/mm/yyyy</i>	
	<i>Time 24 hours clock</i>	