Mid Essex Hospital Services NHS Trust

MANAGEMENT OF SHOULDER DYSTOCIA	CLINICAL GUIDELINES Register no: 04262 Status: Public

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5.5	Sarah Moon – Clarification to Appendix B	February 2014
6.0	Paula Hollis, Senior Midwife	6th July 2015
7.0	Anita Dutta – Full Review	17 April 2018

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1.0 Purpose

1.1 The purpose of this guideline is to enable the practitioner to anticipate, recognize and manage this serious obstetric emergency.

2.0 Equality and Diversity

2.1 Mid Essex Hospital NHS Trust is committed to the provision of a service that is fair, accessible and meets the needs of all individuals.

3.0 Background

3.1 Shoulder dystocia can occur when there is an impaction of the fetal anterior shoulder against the maternal symphisis pubis after the fetal head has been delivered and when the breadth of the shoulders exceeds the diameter of the pelvic inlet preventing immediate delivery of the baby (ALSO 2000) (Advanced Life Support in Obstetrics).

4.0 Introduction

4.1 The national incidence is 2 to 3 per thousand deliveries (0.2-0.3%) at term. This increases to 1.3% at 42 weeks gestation. The incidence of shoulder dystocia increases in babies weighing between 4 and 4.5 kg, but more than 50% of cases occur in babies of normal weight.

4.2 Risk factors pre-labour include previous shoulder dystocia, macrasomia, diabetes mellitus, high body mass index (BMI over 30),and induction of labour.

4.3 Intrapartum risk factors include prolonged first stage of labour, prolonged second stage of labour, oxytocin augmentation and assisted vaginal delivery.

4.4 In terms of prevention, shoulder dystocia is a largely unpredictable and unpreventable event. No studies have found a single risk factor or combinations that are reliable predictors. If antenatal risk factors are identified this should be discussed with the mother and obstetrician and recorded in the case notes. Anticipation can then aid forward planning of care.

4.5 Diagnosis: a risk factor that may have already been identified occurs when the fetal head is said to ‘turtle neck’ i.e. it advances and retracts just as when a turtle sticks its head out of its shell. Once the head is born gentle traction fails to achieve delivery.

4.6 On recognition, this now becomes an emergency situation. The manoeuvres described below represent a safe, structured way of approaching the situation and are based on the teachings of ALSO. This is taught in mandatory training for maternity services using dolls and mannequins.

5.0 Procedure

5.1 An aide memoir is the ‘**HELPERIC’** mnemonic as follows:

- **H** HELP (call for)
- **E** Explain (to the woman)
- **L** LEGS (in to McRoberts position)
- **P** PRESSURE (suprapubic)
- **E** Episiotomy (evaluate for)
- **R** Removal of the posterior arm)
- **I** Internal rotation monoevres
- **C** Change position (All Fours)

(Refer to Appendix A for detailed procedural action plan)

5.2 Help should be summoned immediately. In a hospital setting, this should include further midwifery assistance, including Labour Ward Coordinator, experienced obstetrician, a neonatal resuscitation team and an anaesthetist.

5.3 With suprapubic pressure, there is no evidence that rocking is more effective than continuous pressure, nor that it should be performed for 30 seconds for it to be effective. The emphasis needs to be on applying routine gentle axial traction to see if the manoeuvre has been successful and if the anterior shoulder is not released, then the next manoeuvre should be attempted.

5.4 Evaluation for episiotomy is to be assessed at the appropriate time, just before doing the internal manoeuvres rather than at the beginning of the scenario. Episiotomy may not always be required; however episiotomy will make both internal manoeuvres easier in some clinical circumstances.

5.5 The individual situation will determine the order of actions taken. Attempt removal of the posterior arm first depending on clinical circumstances and operated experience. All internal manoeuvres should commence the same way with the insertion of the **whole hand into the sacral hollow**. Once in the sacral hollow you can assess if the posterior arm is easily accessible and remove it if it is. If not commence internal rotational manoeuvres (RCOG, 2012)

5.6 Gentle axial traction in line with the axis of the fetal spine should be performed rather than gentle downward traction.

5.7 Changing the woman's position to an all fours position is a safe, rapid and effective technique for the reduction of shoulder dystocia. For a slim mobile woman without epidural anaesthesia and with a single midwifery attendant, the 'all-fours' position is probably more appropriate, and clearly this may be a useful option in a community setting. For a less mobile woman with epidural anaesthesia in place, internal manoeuvres are more appropriate

5.8 In all cases of shoulder dystocia, the midwife responsible for the care of the patient should ensure that the shoulder dystocia proforma is completed. The original copy should be retained in the health care records and a photocopy of the proforma should be placed in the labelled tray in the Labour Ward Office. The responsible midwife should report the incident via Datixweb system.

(Refer to Appendix B for a detailed illustration of the shoulder dystocia proforma)

6.0 Complications

6.1 In the event the manoevres fail the obstetric registrar may need to perform:

- Symphysiotomy - division of the symphisis pubis
- Zavanelli manoeuvre, procedure to LSCS - the head is flexed and reinserted into the vagina
- Deliberate clavicle fracture / destructive surgery - if the baby has died; use with caution as a last resort with consultant obstetrician in attendance

6.2 Maternal complications of shoulder dystocia:

- Soft tissue injury and sphincter damage
- Post partum haemorrhage
  (Refer to 'Guideline for the management of postpartum haemorrhage', register number 04234)
- Uterine rupture
- Symphyseal separation

6.3 Neonatal complications of shoulder dystocia:

- Brachial plexus injury
- Clavicle and humeral fracture
- Acidosis; the pH drops by 0.04 per minute
- Hypoxic brain injury

7.0 Immediate Postpartum Management

7.1 Ensure careful observations are carried out on the baby, due to the risk of trauma and possible neurological damage.
(Refer to 'Guideline for resuscitation of the newborn, register number 07074)

7.2 Clear accurate documentation of the sequence of manoevres, timings and personnel present to be recorded in the hospital maternity notes. Contemporaneous record keeping is essential (refer to the guideline for maternity record keeping including documentation in handheld records, register number 06036).

7.3 The use of a shoulder dystocia proforma is recommended by the Royal College of Obstetricians and Gynaecologists.
(Refer to Appendix B)

7.4 Cord blood samples should be taken to ascertain arterial and venous levels and the result should be stapled to the neonatal page of the labour pregnancy booklet. The paediatric team should be informed of the results immediately.

7.5 Debriefing should ensue for the patient, her family and all staff involved.

7.6 A risk event form should be completed to audit the procedure.

8.0 Brachial Plexus Injury

8.1 The incidence of brachial plexus injury is 0.8 – 2 per 1000 live births

8.2 The risk factors are as follows:

- Macrosomia
- Prolonged labour
- Shoulder dystocia
- Breech delivery

8.3 Brachial plexus involves the nerve roots of C_5 to T_1; and the classification is according to the roots involved:

- Grade I - C_5 - C_6 - Causes paralysis of shoulder muscles and elbow flexors
  85% recover with no treatment

- Grade II - C_5 - C_7 - As above plus paralysis of wrist and digit extensors
  60% will recover, 30% will have severe long-term effects,
  e.g. short limb, small hand, poor wrist supination

- Grade III - C_5 - T_1 - Complete paralysis of arm
  50% will recover with no treatment

- Grade IV - C_5 - T_1 - Complete paralysis and Horner's syndrome (meiosis and ptosis)
  (preganglionic injury. No spontaneous recovery - will develop deformed elbow/hand-avulsion from cord and/or poor limb growth, muscular inco-ordination and disturbed rupture of nerves in the sensation if not treated posterior triangle of neck)

8.4 A history, physical examination and the following investigations may identify and diagnose brachial plexus:

- Posture of the arm. Movements of fingers, wrist, elbow, shoulder. Neck swelling or haematoma
- Bruising or swelling of the arm

9.0 Referral Process

9.1 If a midwife or paediatric senior house officer has identified any of the above findings then a referral should be made to the Advanced Neonatal Nurse Practitioner (ANNP) or Paediatric Registrar to conduct a further examination of the baby to investigate the following:

- Clavicular, humeral fractures (X-Ray may be required).
- Horner's syndrome

- If there is perinatal hypoxia, observe for convulsions and check cord gas.
- Look for dislocation of the shoulder, confirm by ultrasound scan of the shoulder
- Clear documentation of resuscitation and examination
- Chest X ray for phrenic nerve palsy

9.2 If a brachial plexus injury has been identified the Advanced Neonatal Nurse Practitioner (ANNP) or Paediatric Registrar should inform his/her consultant and maintain clear and accurate documentation throughout in the health care records.
(Refer to Appendix B)

9.3 The management of brachial plexus injury should involve the explanation to parents of the physical findings and diagnosis. All discussions and care should be documented in the health care records.

9.4 Questions regarding the delivery should be discussed with the obstetrician or midwife.

9.5 A referral should be made by the paediatric registrar to the Physiotherapy Department at Moulsham Grange, Chelmsford for all babies with a brachial plexus injury.

9.6 A follow-up out-patient appointment should be arranged for four weeks at Broomfield Hospital, Chelmsford on discharge home.

9.7 If the infant continues to show no significant improvements by four weeks a further specialist referral is needed. The infant needs to be seen in the Royal National Orthopaedic Hospital, London before 3 months of age.

10.0 Staffing and Training

10.1 All midwifery and obstetric staff must attend yearly mandatory training which includes skills and drills training, involving the management of shoulder dystocia.
(Refer to 'Mandatory training policy for Maternity Services (incorporating training needs Analysis. Register number 09062)

10.2 All midwifery and obstetric staff are to ensure that their knowledge and skills are up-to-date in order to complete their portfolio for appraisal.

11.0 Infection Prevention

11.1 All staff should follow Trust guidelines on infection prevention by ensuring that they effectively 'decontaminate their hands' before and after each procedure.

11.2 All staff should ensure that they follow Trust guidelines on infection prevention, using Aseptic Non-Touch Technique (ANTT) when carrying out procedures i.e. vaginal examinations and conducting deliveries.

12.0 Audit and Monitoring

12.1 Audit of shoulder dystocia cases should be undertaken by the Specialist Midwife for Risk Management. Findings from individual cases will be reported at the Maternity Risk

Management Group (MRMG) and progress with any identified actions will be monitored at subsequent meetings

12.2 Audit of compliance with this guideline will be considered on an annual audit basis in accordance with the Clinical Audit Strategy and Policy (register number 08076), the Corporate Clinical Audit and Quality Improvement Project Plan and the Maternity annual audit work plan; to encompass national and local audit and clinical governance identifying key harm themes. The Women's and Children's Clinical Audit Group will identify a lead for the audit.

12.3 As a minimum the following specific requirements will be monitored:

- Identification of factors associated with shoulder dystocia
- Systematic emergency management of shoulder dystocia
- Standards for record-keeping in relation to shoulder dystocia
- Process for using a reporting form which contains the RCOG minimum data set
- Process for the follow up of the newborn where there is actual/suspected brachial plexus injury or any other injury associated with the complications of the delivery
- Maternity service's expectations for staff training, as identified in the training needs analysis

12.4 A review of a suitable sample of health records of patients to include the minimum requirements as highlighted in point 12.3 will be audited. A minimum compliance 75% is required for each requirement. Where concerns are identified more frequent audit will be undertaken.

12.5 The findings of the audit will be reported to and approved by the Multi-disciplinary Risk Management Group (MRMG) and an action plan with named leads and timescales will be developed to address any identified deficiencies. Performance against the action plan will be monitored by this group at subsequent meetings.

12.6 The audit report will be reported to the monthly Directorate Governance Meeting (DGM) and significant concerns relating to compliance will be entered on the local Risk Assurance Framework.

12.7 Key findings and learning points from the audit will be submitted to the Patient Safety Group within the integrated learning report.

13.0 Guideline Management

13.1 As an integral part of the knowledge, skills framework, staff are appraised annually to ensure competency in computer skills and the ability to access the current approved guidelines via the Trust's intranet site.

13.2 Quarterly memos are sent to line managers to disseminate to their staff the most recently approved guidelines available via the intranet and clinical guideline folders, located in each designated clinical area.

13.3 Guideline monitors have been nominated to each clinical area to ensure a system whereby obsolete guidelines are archived and newly approved guidelines are now downloaded from the intranet and filed appropriately in the guideline folders. 'Spot checks' are performed on all clinical guidelines quarterly.

13.4 Quarterly Clinical Practices group meetings are held to discuss 'guidelines'. During this meeting the practice development midwife can highlight any areas for further training; possibly involving 'workshops' or to be included in future 'skills and drills' mandatory training sessions.

14.0 Communication

14.1 A quarterly 'maternity newsletter' is issued and available to all staff including an update on the latest 'guidelines' information such as a list of newly approved guidelines for staff to acknowledge and familiarise themselves with and practice accordingly.

14.2 Approved guidelines are published monthly in the Trust's Focus Magazine that is sent via email to all staff.

14.3 Approved guidelines will be disseminated to appropriate staff quarterly via email.

14.4 Regular memos are posted on the guideline notice boards in each clinical area to notify staff of the latest revised guidelines and how to access guidelines via the intranet or clinical guideline folders.

15.0 References

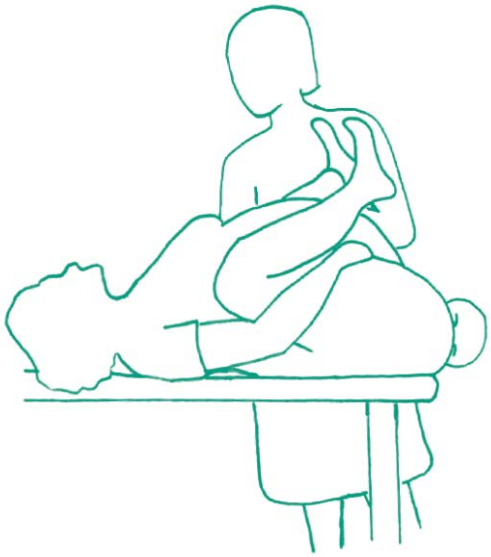
Royal College of Obstetricians and Gynecologists (2012) Shoulder Dystocia. Green Top Guideline no. 42. London: RCOG.

King's Fund. (2008).Safe Births: Everybody's business: An Independent Inquiry into Safety of Maternity Services in England. London: King's Fund.
Available at: https://www.kingsfund.org.uk/publications/safe-births-everybodys-business

Advanced Life Support in Obstetrics (ALSO) [online] Available at: http://www.also-uk.com/

Appendix A

Chart to illustrate the Emergency Procedure for the Diagnosis of Shoulder Dystocia

Action- HELPERIC	Rational
H • Call for Help: **Bleep 4444 – Code Red** **Code Blue** • Extra midwifery support • Obstetric registrar, senior house officer, paediatric registrar and anaesthetist	• The additional staff will be able to: • Assist with maneuvers • Act as scribe, document & record timings • The baby may require resuscitation • The mother may need an anesthetic involvement
E • Explain to the woman	• It is critical to explain to the woman and birthing partners what is happening as they happen.
L • **LEGS** • Place legs into the **McRoberts position**. hyper flexion of the maternal hips so that the thighs touch her abdomen ***Figure 1.*** *The McRoberts' manoeuvre (from RCOG –GTG 42)* 	• This straightens the lumbar lordosis and flattens the sacral promontory, increasing the antero-postero diameter of the pelvis • The manoevre encourages flexion of the fetal spine, allowing the posterior shoulder to slip over the sacral promontory into the sacral hollow • Mc Roberts has a success rate of 90% and has a low rate of complications and is the least invasive procedure.
P • **SUPRAPUBIC PRESSURE** • The assistant uses arm/hand position similar to that used when providing cardio-	• Suprapubic pressure aims to adduct the anterior fetal shoulder • The emphasis should be made on applying gentle axial traction to see

pulmonary resuscitation to push on the fetal shoulder from the side where the fetal back is positioned • No evidence suggests that rocking is better than continuous, or for it to be performed for 30 seconds for it to be effective  ***Figure 2*** *Suprapubic pressure (from RCOG- GTG-42)*	if the manoeuvre has been successful and if the anterior shoulder is not released to move onto the next manoeuvre. • ***Fundal pressure should never be used***
E • **Evaluate for Episiotomy**	• Evaluation for episiotomy is to be assessed at the appropriate time, just before doing the internal manoeuvers rather than at the beginning of the scenario. Episiotomy may not always be required; however episiotomy will make both internal manoeuvers easier in some clinical circumstances.
R • **Removal of the posterior arm** • The whole hand should be inserted into the sacral hollow including the thumb • The fetal wrist should be grasped and the posterior arm should be gently withdrawn from the vagina in a straight line.  ***Figure 3*** *Delivery of the posterior arm (from RCOG GTG-42)*	• The individual situation will determine the order of actions taken try either removal of the posterior arm first depending on clinical circumstances and operated experience. All internal monoevres should commence the same way with the insertion of the **whole hand into the sacral hollow**. Once in the sacral hallow you can assess if the posterior arm is easily accessible and remove it if it is. If not commence internal rotational manoeuvres
I • **Internal maneuvers** • If removal of the posterior arm is unable to	• Pressure on the posterior aspect of the posterior shoulder has the additional benefit of reducing the

be released continue as your hand is on the side of the baby's front in the vagina. Apply pressure to the <u>anterior aspect of the posterior shoulder</u> to move the shoulders into the oblique. **Suprapubic pressure can aid the initial internal manoeuvre only.** • If no movement remove hand and insert the hand on the side of the baby's back again inserting it posteriorly using the pringle grip and getting the whole hand into the sacral hallow. Then apply pressure to the <u>posterior aspect of the posterior shoulder</u> to move the shoulder into the other oblique. **No suprapubic pressure should be used** as will be counter productive. • If the assistant manages to move the shoulders into the oblique with pressure on either the anterior or the posterior shoulder, but still can not deliver with gentle axial traction, then continue the pressure on the same aspect using the other hand and rotate the shoulder a complete 180 degree rotation. This substitutes the anterior shoulder for the posterior shoulder and will resolve the Dystocia. • If pressure on the posterior shoulder is unsuccessful, pressure should be applied to the <u>posterior aspect of the anterior shoulder</u>. This is attempted last as it is the hardest to achieve. The assistant will move their fingers from the sacral hallow to the posterior aspect of the anterior shoulder to rotate the shoulders into the oblique. Supra pubic pressure could assist with this rotation.	shoulder diameter by adducting the shoulders.
C • **Change position –All Fours** • Rotate if appropriate the woman into an all fours position or repeat all of the above again.  (PROMPT Manual)	• Rolling to all fours increases the antero-posterior diameter. Movement and gravity may help dislodge the impacted shoulder • Changing position may be your first line intervention especially in a community setting, or with a mobile low risk woman.

Mid Essex Hospital Services NHS Trust

Shoulder Dystocia Proforma

First Name	Surname	
Hospital No	Date	Place of Birth

First Sequence 1

Delivery of Head ***Spontaneous*** ☐ ***Ventouse*** ☐ ***KIWI*** ☐ ***Forceps*** ☐

Delivery Lead and Name

Consultant **Registrar** **Midwife**

H	Help called			Time Called	Time Arrived
	Emergency call via switch board (4444)	Yes ☐	No ☐		
	Registrar called	Yes ☐	No ☐		
	Senior Midwife called	Yes ☐	No ☐		
	Paediatrician called	Yes ☐	No ☐		
	Anaesthetist called	Yes ☐	No ☐		
	Others Present				

Procedure Used to Assist Delivery of Shoulders 1

			Tick	Order of Procedure	Time	Performed By
E	Explain to the woman		☐			
L	McRoberts' Manoeuvre		☐			
P	Supapubic pressure and axial traction*	Left ☐ Right ☐	☐			
E	Evaluate for episiotomy		☐			
R	Removal of posterior arm	Left ☐ Right ☐	☐			
I	Internal Manoeuvres		☐			
C	Change position to all fours		☐			

****Axial traction refers to the line with the axis of the fetal spine, rather than gentle downward traction.***

Second Sequence *(if required)* 2

H	*Refer to first sequence*

Procedure Used to Assist Delivery of Shoulders *(if required)* 2

			Tick	Order of Procedure	Time	Performed By
E	Explain to the woman		☐			
L	McRoberts' Manoeuvre		☐			
P	Supapubic pressure and axial traction*	Left ☐ Right ☐	☐			
E	Evaluate for episiotomy		☐			
R	Removal of posterior arm	Left ☐ Right ☐	☐			
I	Internal Manoeuvres		☐			
C	Change position to all fours		☐			

	Axial traction refers to the line with the axis of the fetal spine, rather than gentle downward traction.
Time of Delivery of Head	**Time of Delivery of Body**
At Delivery, Face Facing Mother's	**Left** ☐ **Right** ☐

Fetal Conditions

Weight ***kg***	**Apgar 1 Min**	**Apgar 5 Min**	**Apgar 10 Min**
Cord PH	**Arterial**	**Venous**	
Paediatric Assessment at Delivery			
Action Taken if Actual / Suspected Brachial Plexus Injury			

Checklist

Mother kept informed	**Yes**	☐	**No**	☐
Event fully documented	**Yes**	☐	**No**	☐
Clinical electronic incident form (Datixweb) completed ***(attach a copy of shoulder dystocia proforma)***	**Yes**	☐	**No**	☐
Documentation of handover from Labour Ward staff to Postnatal Ward staff	**Yes**	☐	**No**	☐
Documentation of mother offered postnatal debrief	**Yes**	☐	**No**	☐
Evidence of staff offered postnatal debrief	**Yes**	☐	**No**	☐
Evidence of report sent to Supervisor of Midwives	**Yes**	☐	**No**	☐

Print Name _____ Signature _____