Norfolk and Norwich University Hospitals NHS Foundation Trust

Clinical Guideline for: The Management of Shoulder Dystocia

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V1.0	December 2011		To originate document
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Previous Titles for this Document:

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None	Not applicable

Distribution Control

Printed copies of this document should be considered out of date. The most up to date version is available from the Trust Intranet.

Consultation

The following were consulted during the development of this document:

- Consultant Obstetrician
- Labour Ward Lead Consultant Obstetrician
- Practice Development Midwives

Monitoring and Review of Procedural Document

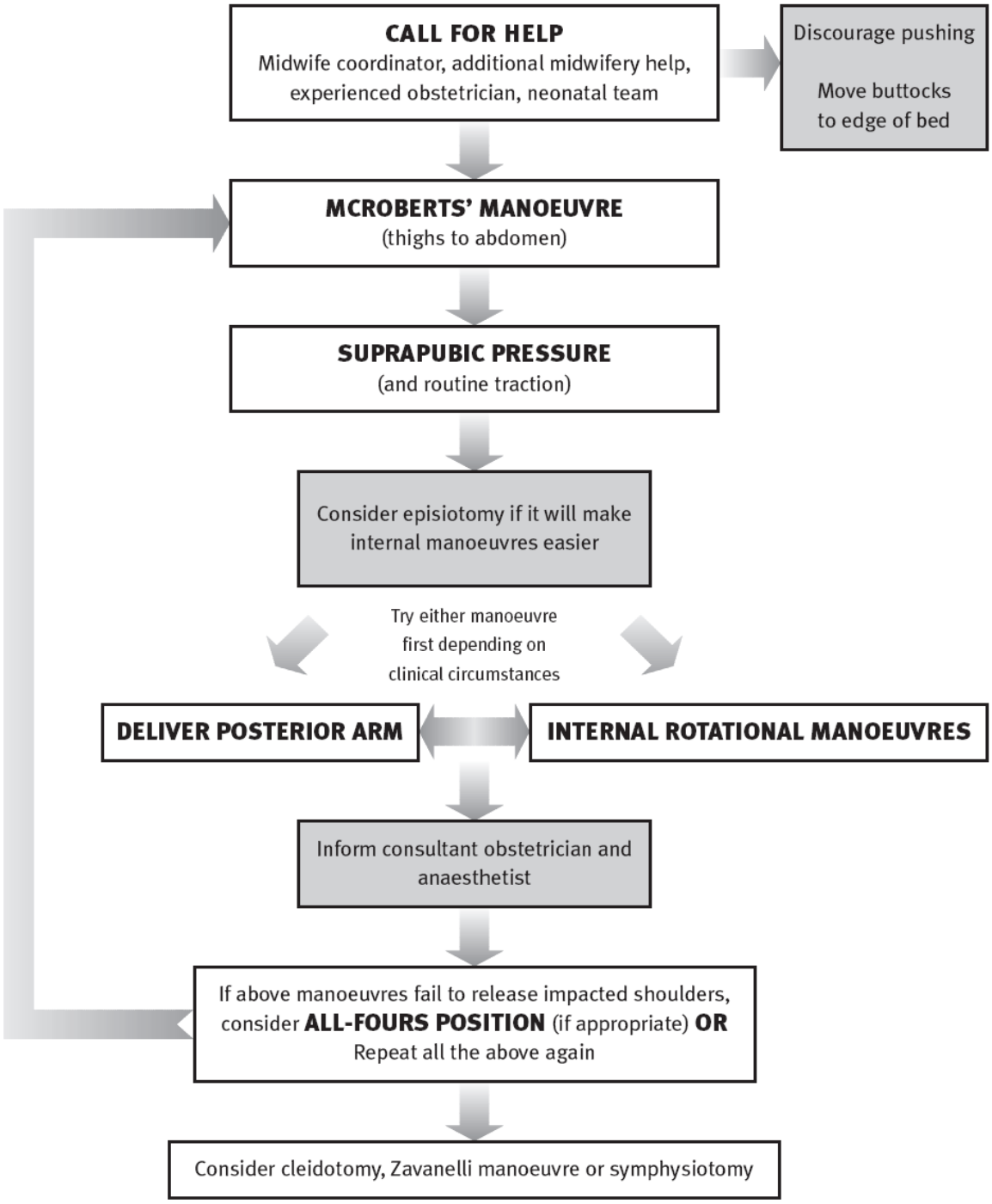
The document owner is responsible for monitoring and reviewing the effectiveness of this Procedural Document. This review is continuous however as a minimum will be achieved at the point this procedural document requires a review e.g. changes in legislation, findings from incidents or document expiry.

Relationship of this document to other procedural documents

This document is a clinical guideline applicable to Norfolk and Norwich University Hospitals NHS Foundation Trust; please refer to local Trust's procedural documents for further guidance, as noted in Section 5.

Contents Page

Quick reference guideline: Algorithm for the management of shoulder dystocia



Baby to be reviewed by neonatologist

DOCUMENT ON PRO FORMA AND COMPLETE CLINICAL INCIDENT REPORTING FORM

1. Introduction

1.1. Rationale

Shoulder dystocia is diagnosed when the shoulders fail to deliver by gentle axial traction following the birth of the head. Shoulder dystocia most commonly occurs when the anterior fetal shoulder impacts on the symphysis pubis - the problem is at the pelvic inlet rather than at the outlet. It is an uncommon occurrence affecting 0.1% - 3% of all births. The Norfolk and Norwich University Hospital (NNUH) had 64 incidences in 2022 (1.28% of all births).

It is a potentially serious complication of vaginal delivery. 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.

1.2. Objective

The aims of this guideline is to provide clear guidance on the effective management of shoulder dystocia based on current available evidence with the aim to reduce neonatal hypoxia and neonatal injury.

1.3. Scope

This guideline is aimed for the use of midwifery and medical staff in maternity services in the Trust.

1.4. Glossary

The following terms and abbreviations have been used within this document:

Term	Definition
BPI	Brachial plexus injury
Shoulder dystocia	a vaginal cephalic birth that requires additional manoeuvres to assist the birth of the baby's shoulders after the head has been born and axial routine traction has failed (RCOG definition)
PROMPT	Practical Obstetric Multi-Professional Training
NNUH	Norfolk and Norwich University Hospital
RCOG	Royal College of Obstetricians and Gynaecologists
BMI	Body Mass Index

2. Responsibilities

All midwifery and obstetric staff have a duty to remain up to date with the contents of this guideline and ensure their practical skills remain current via attendance at PROMPT training to enable the safe management of Shoulder Dystocia.

3. Process to be followed

3.1. Recognise risk factors

A number of antenatal and intrapartum risk factors have been associated with shoulder dystocia but even a combination of these is poorly predictive. The majority of cases of shoulder dystocia occurs in women without any risk factors. 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.

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	Operative vaginal birth

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 1).

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. A Cochrane review showed iunduction of labour in non diabetic mothers with suspected large babies (>4kg) reduced the incidence of shoulder dystocia and fetal fractures, although the overall incidence remained low (Boulvain M, Thornton JG 2023).

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

3.2. Recognise signs of shoulder dystocia

All birth attendants should routinely look for signs of shoulder dystocia including:

- Difficulty with delivery of the face and chin
- The head tightly applied to the vulva or
- Chin retracting (the “turtle neck sign”)
- Failure of restitution of the head
- Anterior shoulder fails to deliver with routine traction (diagnostic traction)

3.3. Emergency management

- Call for help/pull emergency buzzer
- 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.

1. **Explain complication to mother**
   STOP pushing at this stage.

2. **Move woman's buttocks to end of bed**

3. **McRoberts' manoeuvre:**
   Remove pillows, sharply flex, abduct and externally rotate the legs so the thighs touch the sides of mother's abdomen and the bottom is lifted off the bed. Get two assistants – the lithotomy position is NOT sufficient. Attempt routine axial traction to see if the manouvre has been successful. Only use gentle axial traction - do not pull hard, downwards or quickly/with jerky movements.

4. **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.

5. **Consider Episiotomy:**
   Shoulder dystocia is caused by bony obstruction at the pelvic inlet but episiotomy creates more room posteriorly and permits easier access for internal manouvres.

6. **Internal manoeuvres:**
   Select the appropriate manoeuvre based on the clinical situation and experience - either removal of posterior arm or internal rotational manoeuvres.

   To deliver the posterior arm, use the "Pringle hand" to place a hand in the vagina posteriorly where there is more space. Feel for the fetal wrist and sweep the arm up and over the face to release it. 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. Delivering the posterior arm reduced the diameter of the fetal shoulders by 10%.

   Alternatively, use internal rotation to move the shoulders into the oblique (wider) diameter of the pelvis. Use the "Pringle hand" to place a hand in the vagina posteriorly where there is more space. Place pressure on the anterior or posterior shoulder (depending on access) and attempt to rotate the shoulders into the oblique. Addition of supra pubic pressure in the appropriate direction from an assistant may help with the rotation. If successful apply gentle traction to the head.

7. **Ask patient to get onto all fours:**
   Change of position may free the shoulders.

8. **Start again**
   If the above manoeuvres have failed to allow birth, start again from the top

9. **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:

- Zavanelli manoeuvre- vaginal replacement of the head and followed by Caesarean section
- Cleidotomy - surgical or manual division of the fetal clavicle
- Symphysiotomy - dividing the anterior fibres of the symphyseal ligament

3.4. 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.

3.5. 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 possible injuries include fractures to the clavicle and humerus, pneumothoraces and hypoxic brain damage.

3.6. 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.

4. Training & Competencies

All midwifery and obstetric staff should have annual PROMPT training in managing maternity emergencies including shoulder dystocia.

5. Related Documents

RCOG Shoulder Dystocia (Green-top guideline no 42) 2012
rcog.org.uk/media/ewgpnmio/gtg_42.pdf

PROMPT Maternity Foundation You Tube Channel Shoulder Dystocia training video:
https://youtu.be/UTz2eliZOL8?si=Yv8xIt3y0V6Spamb

6. References

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10. Royal College of Obstetricians & Gynaecologists (2008) Practical Obstetric Multi-Professional Training – Course Manual.

7. Audit of the process

Key elements	Process for Monitoring	By Whom (Individual / group /committee)	Responsible Governance Committee /dept	Frequency of monitoring
Management of per Shoulder dystocia proforma	Datix reporting – maternity trigger	Maternity risk and governance team	Maternity Risk and Governance	Case by case review

The Datix investigation results are discussed by the Risk and Governance team with learning disseminated to Maternity staff through individual feedback, safer practice notices, intrapartum care meetings and case presentations at Maternity Clinical Governance.

8. Appendices

8.1. Appendix 1: Shoulder Dystocia Proforma

Please see proforma at Trust Doc ID: 23593

9. Equality Impact Assessment (EIA)

Type of function or policy	Existing

Division	Women's and Childrens	**Department**	Maternity
Name of person completing form	V Maxey	**Date**	31/07/2024

Equality Area	Potential Negative Impact	Impact Positive Impact	Which groups are affected	Full Impact Assessment Required YES/NO
Race	No	No	No	No
Pregnancy & Maternity	No	Appropriate management for all	No	No
Disability	No	No	No	No
Religion and beliefs	No	No	No	No
Sex	No	No	No	No
Gender reassignment	No	No	No	No
Sexual Orientation	No	No	No	No
Age	No	No	No	No
Marriage & Civil Partnership	No	No	No	No
EDS2 – How does this change impact the Equality and Diversity Strategic plan (contact HR or see EDS2 plan)?		No impact		

- **A full assessment will only be required if: The impact is potentially discriminatory under the general equality duty**
- **Any groups of patients/staff/visitors or communities could be potentially disadvantaged by the policy or function/service**
- **The policy or function/service is assessed to be of high significance**

IF IN DOUBT A FULL IMPACT ASSESSMENT FORM IS REQUIRED

The review of the existing policy re-affirms the rights of all groups and clarifies the individual, managerial and organisational responsibilities in line with statutory and best practice guidance.