WOMEN'S HEALTH AND PAEDIATRICS

MATERNITY UNIT

Shoulder Dystocia

Amendments			
Version	**Date**	**Comments**	**Approved by**
1	09.05.2023	Whole guideline rewritten	Perinatal Guidelines Group
1.1	02.10.2023	Amendment to day 1 neonatal check section to align with NIPE guideline	Perinatal Guidelines Group

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In consultation with: Perinatal Guidelines Group

Ratified by: Perinatal Guidelines Group

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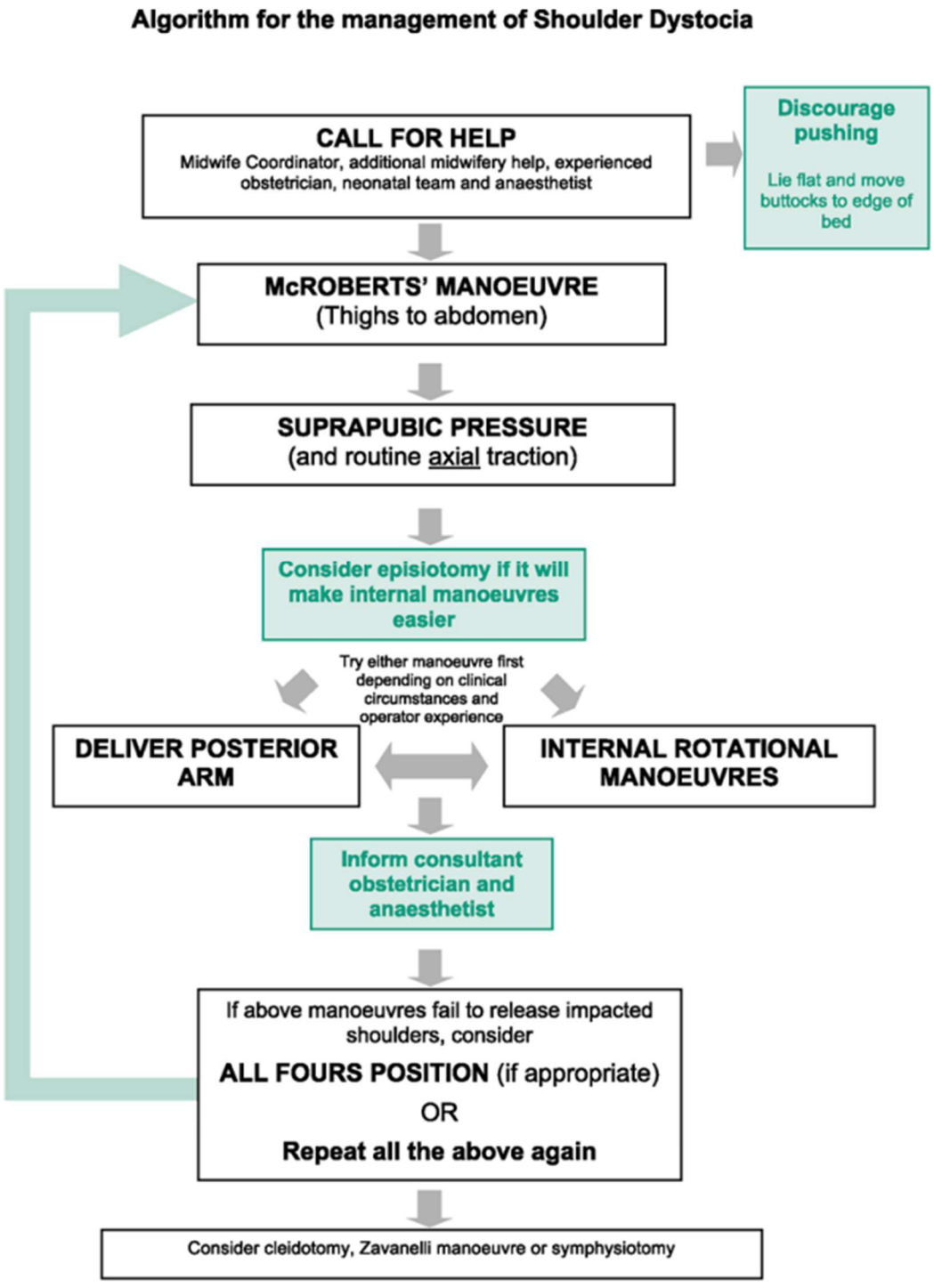
Target audience: All health professionals within the maternity services

Equality impact assessment: Perinatal Guidelines Group

Comments on this document to: Perinatal Guidelines Group

Contents

Algorithm for the management of Shoulder Dystocia



Baby to be reviewed by neonatologist after birth and referred for Consultant Neonatal review if any concerns

DOCUMENT ALL ACTIONS ON PROFORMA AND COMPLETE CLINICAL INCIDENT REPORTING FORM.

Shoulder Dystocia

1.0 Introduction

1.1 Definition of Shoulder Dystocia

Shoulder dystocia is defined as a *vaginal cephalic delivery that requires additional obstetric manoeuvres to deliver the fetus after the head has delivered and where routine axial traction has failed to deliver the shoulders.* Shoulder dystocia occurs when either the anterior or less commonly the posterior fetal shoulder impacts on the maternal symphysis, or sacral promontory respectively.

Shoulder dystocia occurs in 0.58 - 0.7% of vaginal deliveries. Routine traction is defined as "that traction required for delivery of the shoulders in a normal vaginal delivery where there is no difficulty with the shoulders" RCOG 2012. Axial traction is traction in line with the fetal spine i.e. without lateral deviation.

Shoulder dystocia is an unexpected obstetric emergency, 50% of all shoulder dystocia of which occur in normal birth weight babies. Early recognition is paramount in successful management of shoulder dystocia with McRobert's manoeuvre being successful in up to 90% of cases of shoulder dystocia.

1.2 Perinatal Morbidity and Mortality

When managed appropriately there is still significant perinatal morbidity and mortality associated with shoulder dystocia.

1.2.1 Fetal

- cerebral hypoxia
- cerebral palsy
- fractured clavicle/ humerus
- brachial plexus injury

Fetal brachial plexus injuries (Erb's palsy, Klumpke's paralysis) complicate 4-16% of deliveries complicated by shoulder dystocia with less than 10% resulting in permanent disability.

1.2.2 Maternal

- postpartum hemorrhage (11%)
- 4th degree tears (3.8%)

1.3 Risk Factors

1.3.1 Antenatal

- Macrosomia >4.5kg
- Maternal body mass index >30kg/m²
- Maternal diabetes
- Previous shoulder dystocia
- Induction of Labour
- Increased maternal age (Lanarkshire NHS 2018)
- Post-term pregnancy (Lanarkshire NHS 2018)

1.3.2 Intrapartum

- Prolonged first stage of labour
- Secondary arrest
- Prolonged second stage of labour
- Oxytocin augmentation
- Assisted vaginal delivery

2.0 Recognition of Shoulder Dystocia

Timely management of a shoulder dystocia requires prompt recognition, observe for:

- Difficult delivery of the face and chin
- Chin remains tightly applied to the vulva or even recedes back into the vagina after the delivery of the head (turtle necking)
- Failure of restitution of the fetal head
- Failure to deliver the shoulders using routine axial traction with the contraction following birth of the head

Management of Shoulder Dystocia

2.1 Initial Steps

Call for Help and declare the emergency – When the diagnosis is made, use the emergency buzzer to summon help, clearly state 'shoulder dystocia' to the arriving team and request the following immediately:

• DIAL 2222 and ask for 'Obstetric emergency'

• DIAL 2222 and ask for 'Neonatal Emergency'

Ask the person making the emergency calls to return to the room to confirm that both calls have been made.

Request the resuscitaire be brought to the location of the emergency.

During a homebirth, the attending midwives should dial 999, state they are a health professional and ask for a 'category 1' ambulance to provide emergency assistance. This call should be made when a shoulder dystocia is diagnosed, or immediately afterwards in the event of maternal or neonatal compromise. Additionally, a call may also be made to the red phone on LW Ext 2160.

Once shoulder dystocia is diagnosed the birth attendant should ensure that;

- Pushing is discouraged
- The position of the fetal back is identified (this is essential for manoeuvres)
- Evaluate for episiotomy
- An episiotomy will not relieve the bony obstruction of shoulder dystocia but may be required to allow whole hand access when performing the internal manoeuvres.
- Fundal pressure is NOT used

2.2 McRobert's position

- Assist the woman into McRobert's position;
- Lay the woman/bed flat, remove pillows (may have one under the head)
- Bring maternal buttocks to edge of bed and remove the end of the bed.
- With one assistant either side, the woman's legs should be hyper-flexed and abducted, positioning the maternal thighs on either side of the abdomen. When positioned correctly, the buttocks should be lifted off the bed.
- If the woman is in lithotomy at the time of diagnosis, her legs will need to be removed from the supports, straightened back down and then placed into McRobert's.

Mc Robert's straightens the lumbosacral angle, rotates the maternal pelvis and increases the anterior-posterior diameter of the pelvis. Success rates are reported as high as 90% using McRoberts Manoeuvre alone.

2.3 Suprapubic pressure

- Suprapubic pressure can be applied together with McRoberts position.
- Suprapubic pressure reduces the fetal bisacromial diameter and rotates the anterior fetal shoulder into the wider oblique pelvic diameter.
- Suprapubic pressure is applied by the assistant on the same side as the fetal back in the direction of the fetal chest (a downward lateral direction at 45 degree angle) using a cardiac massage style hand position just above the maternal symphysis pubis.

- Constant or rocking pressure can be used for up to 30 seconds.

  This has two possible effects;

  a) Adducting the shoulders and reducing the bisacromial diameter

  b) Rotation of the anterior shoulder towards the larger oblique diameter of the inlet.
- Routine axial traction should only be used if movement of the impacted anterior shoulder is felt.

2.4 Internal Manoeuvres

There is no advantage between delivery of the posterior arm and internal rotation manoeuvres, therefore clinical judgement and experience can be used to decide their order.

- Access for any internal manouevre should be gained by inserting the whole hand into the sacral hollow
- The whole hand should be used as insertion of two fingers will not be adequate to reach the correct fetal part or provide adequate pressure

2.4.1 Posterior Arm

The fetal wrist should be grasped and the posterior arm should be gently withdrawn from the vagina in a straight line.

2.4.2 Other internal manoeuvres

Internal rotation manoeuvres; Rotation can be most easily achieved by pressing on the anterior or posterior aspect of the posterior shoulder.

1. Applying pressure on the posterior or anterior aspect of the posterior shoulder has the additional benefit of reducing the shoulder diameter by adducting the shoulders and can be performed in conjunction with suprapubic pressure). The shoulders should be rotated into the wider oblique diameter.

2. Apply pressure on the posterior aspect of the anterior shoulder to adduct and rotate the shoulders into the oblique diameter.

2.4.3 All fours position

The 'all-fours' position has a high success rate but use of this technique will need to be assessed based on clinical judgement;

The individual circumstances should guide the healthcare professional as to whether to try the 'all fours' technique before or after attempting internal rotation and/or delivery of the posterior arm.

Early all fours position may be appropriate for;

- Mobile woman without epidural anaesthesia
- Community setting
- Single birth attendant

For a less mobile woman with epidural anaesthesia in place, internal manoeuvres are more appropriate

2.4.4 Third-line methods

Several third-line methods have been described for those cases resistant to all simple measures as described above. These include;

- Cleidotomy (bending the clavicle with a finger or surgical division)
- Symphysiotomy (dividing the symphyseal ligament)
- Zavanelli manoeuvre (Cephalic replacement of the head, and delivery by caesarean section).

A senior doctor will evaluate the whole clinical picture before any of these manoeuvres are undertaken.

3.0 Post delivery management

3.1 Midwifery / Obstetric

Birth attendants should be aware of the increased possibility of;

- Postpartum haemorrhage
- 3rd and 4th degree tears (and or other severe perineal/vaginal trauma)
- The need for neonatal resuscitation
- Fetal injury (brachial plexus injury, fractures, pneumothoraces and hypoxic brain damage)

Blood should be taken from both the umbilical artery and vein for paired cord gases.

3.2 Neonatal / Physiotherapy

The Neonatal SHO will have been fast bleeped as part of the shoulder dystocia management and will usually be present for the delivery.

The Neonatal SHO will:

- Assess the baby's condition at birth and resuscitate following the Neonatal resuscitation guidelines

- Make an assessment of the baby's upper limb movements, and document the need for a repeat observation of limb movements by the midwife performing the initial examination of the baby.

3.2.1 Day 1 Neonatal check

The baby must have a full physical examination (baby check) carried out by a neonatologist (neonatal doctor or ANNP) or NIPE trained midwife on day 1.

If there is any suspicion of fracture (reduced movement, distress or pain on handling, crepitus or tenderness over the clavicle), an x-ray of the clavicle and upper limb must be arranged. If the baby has a fracture and / or shows signs of discomfort, simple analgesia (Paracetamol) can be prescribed. Fractured clavicles are often relatively asymptomatic. Humeral fractures may require analgesia and immobilisation (by placing the baby's arm inside the baby-grow).

All babies with humeral fractures will be referred to the Orthopaedic team and the paediatric physiotherapist

If there is any suspicion of brachial plexus injury:

- inform attending Neonatal Consultant
- refer as soon as possible to the paediatric physiotherapist who will arrange to assess the baby on the maternity unit.
- If the baby is born over the weekend but is well enough for discharge, inform the physiotherapist as soon as possible during the following working week. The baby will then be reviewed by the physiotherapist as an outpatient.

3.2.2 Long Term Follow Up of baby:

The physiotherapist will arrange follow up for babies with fractures or evidence of brachial plexus injury. Babies with suspected brachial plexus injury will also require an outpatient appointment with the attending Consultant at 6 – 8 weeks. If there are continuing concerns at that time (no return of biceps) the Consultant will refer the baby to the Peripheral Nerve Injury Clinic at The National Orthopaedic Hospital, Stanmore.

4.0 Documentation and debrief

A trained designated person should be identified to act as the person responsible for record keeping (scribe) when a shoulder dystocia is identified

It is very important to clearly document all delivery details including;

- Time of head delivery
- Head-body delivery time interval
- Position of fetal back in relation to the mother
- Manoeuvres used (in order performed), by whom, and the time performed

- Maternal perineal and vaginal examination (episiotomy performed/other trauma?)
- Arterial and venous cord gases

The proforma on Badgernet can be used to support this documentation.

Full and clear explanations should be given to the parents. The professionals involved should be offered the chance to discuss the case in a supportive environment.

5.0 Skills and Drills

Training for all birth attendants in the management of shoulder dystocia is mandatory to ensure optimal management of shoulder dystocia.

All birth attendants are advised to attend regular in house 'skills and drills' training to maintain the competency for the management of shoulder dystocia.

Midwives must attend obstetric emergencies training which will include shoulder dystocia on a rotational basis. (attending protected time annually).

References

Royal College of Obstetricians and Gynaecologists (RCOG) 2012. Shoulder Dystocia, guideline No 42, London: RCOG. www.rcog.org.uk

Managing Obstetric Emergencies and Trauma manual, Cambridge Press.