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SHOULDER DYSTOCIA

Shoulder dystocia is an obstetric emergency. The RCOG defines shoulder dystocia as 'a vaginal cephalic delivery that requires additional obstetric manoeuvres to deliver the foetus after the head has delivered and gentle tractions has failed'.[1]
Shoulder dystocia occurs when the anterior foetal shoulder impacts on the maternal pubic symphysis. Rarely, the posterior foetal shoulder impacts on the maternal sacral promontory.[2]

Risk factors

Awareness of risk factors is important so that shoulder dystocia may be predicted. This would allow to prepare and maximise the efficiency of the management of shoulder dystocia.[3] Risk factors include:[1,2,4]

Antenatal	Intrapartum
Advanced maternal age BMI > 30 kg/m2 Diabetes mellitus Fetal macrosomia (>4.5 kg) Induction of labour Post-term pregnancy Previous shoulder dystocia	Assisted vaginal delivery Oxytocin augmentation of labour Prolonged first stage of labour Prolonged second stage of labour Secondary arrest

Clinical features

There are two important clinical features indicative of shoulder dystocia. The first one is that, following the birth of the foetal head, the birth of the foetal body does not occur with maternal pushing effort and standard traction.
A second sign may also occur; following the birth of the foetal head, the foetal head may suddenly retract back against the maternal perineum. This is often referred to as the 'turtle sign'.[5,6]

Management

Maternity units throughout the UK practice skills drills training, including shoulder dystocia. A common mnemonic used for the management of shoulder dystocia is HELPERR.[2,7]

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H	Call for **H**elp – senior midwife, obstetric team, paediatrician,
E	anaesthetist
L	Evaluate for **E**pisiotomy – this may help with internal
P	manoeuvres
E	**L**egs into McRoberts' (hyperflexion of maternal hips)
R	Apply suprapubic **P**ressure
R	**E**nter vagina and perform internal manoeuvres
	Release posterior fetal arm
	Roll patient onto all fours

Additional assistance should include the obstetric team who will manage the shoulder dystocia. The paediatrician should be present to assess the baby and resuscitate if required. Midwives will be needed to assist with the management and to document the events and reassure mother (they will have usually been present since her admission to the delivery suite). An anaesthetist may need to be present in case the patient needs to be transferred to theatre for an operative delivery.

If an episiotomy has not yet been performed, it should be evaluated if an episiotomy will provide additional room to perform the internal manoeuvres. This is not always necessary and should not be performed routinely.

The maternal legs should be in McRoberts' position in which the maternal hips are hyperflexed causing the pelvis to tilt with a rotation of the pubic symphysis towards the maternal head. Suprapubic pressure is often performed at the same time in an attempt to manually disimpact the shoulder. These two manoeuvres will disimpact a shoulder in the majority of cases.
Internal manoeuvres should be performed if the two external manoeuvres do not resolve the shoulder dystocia

Internal manoeuvres include Rubin II and Woods' screw. The Rubin II manoeuvre consists of digital pressure on the posterior aspect of the anterior shoulder. This may be combined with the Woods's screw manoeuvre, which is the application of pressure on the anterior aspect of the posterior shoulder. Both manoeuvres can also be reversed in the opposite direction.

If internal manoeuvres are unsuccessful it should be attempted to release the posterior arm. This is done by flexing the foetal elbow and sweeping the foetal arm across the chest and face.

The Gaskin manoeuvre in which the patient rolls over to all fours may aid delivery by changes in the pelvic dimensions. However, in practice

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it may be difficult to achieve a change of position for example because of maternal exhaustion or epidural analgesia.

If all of the above proves unsuccessful additional manoeuvres may be performed. This includes the Zavanelli manoeuvre, which consists of flexing the foetal head and pushing it back up into the vagina. Following this, an emergency caesarean section is performed.
Another option would be a symphysiotomy although this may have severe consequences and is not routinely performed anymore.
It is important that communication between healthcare professionals and the patient and her partner is maintained.

Complications[2,8]

Shoulder dystocia may lead to both maternal and foetal complications.
Maternal complications include postpartum haemorrhage caused by uterine atony due to either overdistension or mechanical obstruction. Although an episiotomy may have been performed, an important maternal complication is third and fourth degree perineal tears.
Hypoxia and cerebral palsy may follow from oxygen deprivation during the shoulder dystocia. Rarely, shoulder dystocia causes foetal death.

Neonatal fractures may occur as a complication of shoulder dystocia or the management of it. The humerus may fracture when the posterior arm is forced against resistance during the manoeuvres. A clavicle fracture may arise from the externally applied suprapubic pressure or it may be caused by the force on the shoulder from the maternal pubic symphysis.

A common neonatal complication is brachial plexus injury. This often results from excessive traction on the foetal head. Brachial plexus injury may spontaneously resolve but it may also lead to loss of movement of the affected arm.

Although most shoulder dystocia's rarely require internal manouveres or operative delivery, it is important that the team in attendance have a debrief of events. In addition, the parents should be given a clear explanation of events and an opportunity to discuss the events.

[1] Royal College of Obstetricians and Gynaecologists (2012) Shoulder Dystocia Green-Top Guideline No. 42, : NHS Evidence.
[2] Collins, S. et all (2008) 'Obstetric Emergencies', in Collins, S. et all (ed.) Oxford Handbook of Obstetrics and Gynaecology. Oxford: Oxford University Press, pp. 373-375.
[3]Jevitt, Cecilia M. (2005) 'Shoulder dystocia: etiology, common risk factors, and management', Journal of Midwifery & Women's Health, 50(6), pp. 485-97.

Natalie Branderhorst

2nd year

Warwick Medical School

[4] Tsur, A., Sergienko, R., Wiznitzer, A., Zlotnik, A. and Sheiner, E. (2012) 'Critical analysis of risk factors for shoulder dystocia', Archives of gynecology and obstetrics , 285(5), pp. 1225-9.

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[6] Lerner, H. (2006) Shoulder Dystocia - Facts, Evidence and Conclusions, Available at: http://shoulderdystociainfo.com (Accessed: 18th February 2013).

[7] American Academy of Family Physicians (2006) Advanced Life Support in Obstetrics, Available at: www.also.org.uk (Accessed: 17th February 2013).

[8] Allen, R. and Gurewitsch, E. (2011) Shoulderdystocia, Available at: http://emedicine.medscape.com/article/1602970-overview#a01 (Accessed: 18th February 2013).