SHOULDER DYSTOCIA: INCIDENCE, COMPLICATIONS, AND MANAGEMENT STRATEGIES KIRKUK, AZADI HOSPITAL


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ABSTRACT
Shoulder dystocia can lead to death or brain damage for the baby. Traction on the head can damage the brachial plexus. The diagnosis should be made when the mother cannot push the shoulders out with her own efforts with the next contraction after delivery of the head. There should be no traction on the head to diagnose shoulder dystocia. McRoberts’ position is acceptable but it should not be accompanied by any traction on the head. If the posterior shoulder is in the sacral hollow then the best approach is to use posterior axillary traction to deliver the posterior shoulder and arm. If both shoulders are above the pelvic brim, the posterior arm should be brought down with Jacquemier’s maneuver. If that fails, cephalic replacement or symphysiotomy is the next step. After shoulder dystocia is resolved, one should wait 1 minute or so to allow placental blood to return to the baby before cutting the umbilical cord.

KEYWORDS: Shoulder dystocia, brachial plexus injury, symphysiotomy, neonatal resuscitation, Jacquemier’s maneuver.

Definition and incidence
Shoulder dystocia is fundamentally a mechanical problem. The average gynecoid pelvis at the inlet is 12 cm in the anteroposterior diameter and 13 cm in the transverse diameter. The average sized fetus has a biacromial diameter of about 12–15 cm.[1,2] The shoulders are usually in the anteroposterior diameter above the pelvic inlet but they traverse the pelvic inlet in the larger transverse diameter.[3] Although the biacromial diameter is often larger than the transverse diameter of the pelvic inlet, there is usually no obstruction because the shoulders are compressible and they are pushed forward toward the fetal chest. It can be a tight fit.[4]
By the time the head has exited the vulva, the fetal shoulders have usually traversed the pelvic inlet. About 20% of the time the shoulders are still in the anteroposterior diameter or slightly obliquely and will not traverse the inlet until the next uterine contraction, coincident with maternal pushing.\textsuperscript{[3]} If one believes that the shoulders must follow immediately after the head and thereby starts exerting downward traction on the head, one may interfere with the rotation of the shoulders at the inlet and contribute to an iatrogenic shoulder dystocia. At other times, there is a genuine mechanical impediment to delivery. If the chest circumference is too big and the biacromial diameter is, say, 16 or 17 cm the shoulders may not be able to enter even a normal sized pelvis. Most cases of shoulder dystocia are, indeed, caused by a big fetus trying to get through a normal sized pelvis. A few instances occur when an average sized fetus is trying to get through a small pelvic inlet. One can appreciate how a 3,700 g fetus with a biacromial diameter of 15 cm may have trouble getting the shoulders through a pelvic inlet of 11 × 12 cm.

Shoulder dystocia is a subjective diagnosis. The only objective definition that has been proposed is a head-to-body delivery interval of more than 60 seconds.\textsuperscript{[5]} By this definition, some 10% of vaginal cephalic deliveries would be considered as having shoulder dystocia. This definition makes little sense, especially for those deliverers who prefer to wait for the next contraction after delivery of the head to get the shoulders delivered. The American\textsuperscript{[6]} and British\textsuperscript{[7]} Colleges of Obstetrics and Gynecology define shoulder dystocia as the failure of the shoulders to deliver with maternal pushing and gentle downward traction on the head. One problem with this definition is that you often have the mother pushing in the absence of a contraction and the second is that it implies that pulling on the head is allowed and is a normal feature of delivery. I will address this when discussing the topic of brachial plexus injury without shoulder dystocia. The definition that I prefer, but it is in the minority, is the failure of the mother to deliver the shoulders with her own maternal effort during the next contraction after the contraction that has delivered the head.

The reported incidence of shoulder dystocia is very variable, but seems to have increased in the last several decades. Whereas in the mid-20th century the usual reported incidence was 0.5% or less, it is now usually reported in the 2%–3% range, as high as 5% range,\textsuperscript{[8]} and even .10% if one uses the head-to-body delivery interval. Part of this increased incidence is certainly due to the fact that there are more big babies being born than in the past. One speculation is that the increased use of epidural anesthesia and the practice of having women
deliver on their backs might be responsible.\cite{9} It is certainly plausible that a woman unencumbered by epidural anesthesia and allowed to assume her own position for pushing would probably be able to push the shoulders out more easily. In any event, in round figures, the likelihood of encountering shoulder dystocia after a vaginal cephalic delivery is about 1% for babies weighing under 4 kg, about 5% for babies weighing between 4 and 4.5 kg, and about 10% for babies weighing more than 4.5 kg.

**Consequences of shoulder dystocia**

Shoulder dystocia is a serious emergency for the baby. Once the head has delivered and one has the usual type of shoulder dystocia where the posterior shoulder is below the sacral promontory, the baby’s chest is compressed. Although the nose and mouth are free, the baby cannot breathe because the chest is compressed. The uterus may still be contracting and interfering with blood supply to the placenta. If there is some umbilical cord compression, hypoxemia and acidosis may start to develop. If there is partial umbilical cord compression, the fetal heart may continue to pump blood through the less compressible umbilical arteries into the placenta, but compression of the more easily compressed umbilical vein may not allow blood to return from the placenta back to the fetus. Along the same lines, the increased intrathoracic pressure may not allow filling of the fetal heart. Barnum\cite{10} hypothesized this as a cause of infant death due to shoulder dystocia and the hypothesis has been proposed\cite{11} that hypovolemic shock may be the reason why some babies are unresuscitatable after shoulder dystocia. It has also been speculated that compression of the fetal neck may interfere with blood flow to and blood drainage from the brain, but this would not account for the failure of resuscitation in some cases. As a rule of thumb, once one gets to the 5-minute mark or so with unresolved shoulder dystocia there is a real chance of death or brain damage to the baby and one may have to think of extraordinary measures to resolve the shoulder dystocia. There are also implications for how to conduct the resuscitation of the baby, which will be discussed later.

Whereas death and brain damage are a consequence of the shoulder dystocia itself, the other less grave but still serious complication of brachial plexus injury is almost always a consequence of the accoucheur trying to resolve the shoulder dystocia. I am skeptical that permanent brachial plexus injury can occur without some imposed traction. I acknowledge that when the head is delivered and one or both shoulders are trapped at the pelvic brim that the neck and brachial plexus nerves may be under more stretch than usual. But the idea that
the shoulders are caught up by the bony pelvis and that the uterine contractions and maternal pushing efforts continue to push the head forward while the shoulders are trapped or, in other words, the head keeps moving while the shoulders are stuck – the head is pulling the body – is too fanciful for me. It was clearly shown more than a century ago with cadaver experiments that traction on the baby’s head in a direction away from the trapped shoulder makes the brachial plexus nerves taut like violin strings and that it does not take much force to have them snap.\textsuperscript{12,13} It is true that just because traction is the main cause of permanent brachial plexus injury it does not mean that all brachial plexus injuries are caused by traction, but the vast majority are.

There are three lines of evidence that are proposed as supporting the idea that brachial plexus injury may be a non-traction injury. The first is the occurrence of brachial plexus injury without described shoulder dystocia. I present one of the complications in my early career that might explain this phenomenon.

The mother had type 1 diabetes. The head delivered easily. In anticipation of possible shoulder dystocia, the legs had been brought into McRoberts’ position. After the head was delivered, I put my hands on the sides of the head and asked the mother to push and I pulled down while the patient pushed. The shoulders delivered easily. The baby weighed just over 4 kg. As far as I was concerned, there had not been any shoulder dystocia because there had been no difficulty delivering the shoulders. When I went to make rounds the next morning, I found to my chagrin that the baby had a brachial plexus injury in the arm that had been anterior. The injury took over a year to heal with almost, but not quite, complete return of function.

When there is a brachial plexus injury and no shoulder dystocia is recorded, it is possible that sometimes this is a deliberate omission of documentation by the obstetrician so to have the defence that this was a non-iatrogenic injury. But, more often, it is likely a case where the usual customary method of delivery of the shoulders succeeds and shoulder dystocia is not appreciated. If, for example, one requires (as the standard definitions do) that the diagnosis of shoulder dystocia be made only after gentle downward traction has failed to deliver the anterior shoulder, then, if with perceived gentle downward traction the anterior shoulder is delivered, then the diagnosis of shoulder will not be made, but the brachial plexus could be injured. This is what I suspect happened in my case.
A second line of evidence proposed in support of the non-traction theory of brachial plexus palsy is that the obstetrician genuinely did not put any more traction to deliver the head than what he had always done. I present another serious brachial plexus injury in my career.

This injury occurred in the baby of a type 2 diabetic woman. In the second stage, the maternal heart rate was being recorded instead of the fetal heart rate. When this was discovered and the fetal heart rate was checked it was severely bradycardic and a midcavity vacuum delivery was done. Shoulder dystocia was identified, which was resolved by delivery of the posterior arm, which led to a fracture of the humerus. The baby was born in a depressed condition with metabolic acidosis and had moderate encephalopathy. The baby recovered well from the encephalopathy but at 1 month of age I discovered that the baby had a brachial plexus injury of the upper arm. When there was little improvement by 1 year of age, reconstructive surgery was done but at 3 years of age there was still significant handicap. I cannot remember, and the notes do not indicate, if downward traction was made on the head before the shoulder dystocia was resolved by delivery of the posterior arm (or, possibly, after the posterior arm was delivered to deliver the anterior arm), but presumably there was. Certainly there was no downward traction out of the ordinary by the resident or myself as I would have remembered that.

Most obstetricians have been taught that after delivery of the head they should put their hands on either side of the head, ask the mother to push, and then pull gently down on the head. If shoulder dystocia is encountered they are taught to try McRoberts’ position or suprapubic pressure and pull gently down again. The great majority of the time both shoulders are already through the inlet by the time the head is delivered. Since the shoulders are not stuck when the obstetrician puts his hands on the side of the head and pulls on the head, there is no impediment to the shoulders and head moving together, so no harm is done. The obstetrician gets used to pulling with a certain amount of traction and the great majority of the time no harm is done.\[9\] But for the very infrequent case where one or both shoulders are still at the pelvic brim and the shoulders do not easily follow the head, then a customary level of traction that caused no problem in hundreds of cases beforehand may be enough (especially if the fetus is asphyxiated and has no muscle tone) to cause serious injury to the brachial plexus.

The third argument proposed in support of the non-traction etiology for brachial plexus injury is the occurrence of brachial plexus injury in the arm that was posterior. If the anterior shoulder is trapped behind the pubic symphysis and the posterior shoulder is in the sacral
hollow and, instead of delivering the posterior arm and shoulder directly, one pulls on the head in an upward direction, the neck and contained posterior brachial plexus can be overstretched. This was clearly shown in a picture in an 1897 article.12 Another way to damage the posterior brachial plexus is to rotate the nonrestituted head the wrong way and then pull.14

I do not think that the problem of brachial plexus injury will be solved unless obstetricians acknowledge that traction is almost invariably the cause instead of proposing other theories to spare us medicolegal problems.

**Prevention of shoulder dystocia**

About half of shoulder dystocia cases occur in the 10% or so of women delivering a baby weighing 4 kg or more. It stands to reason that if there were fewer big babies born there would be less shoulder dystocia. The main determinant of a baby’s birth weight in nondiabetic women is the weight of the mother before pregnancy and the amount of weight she gains during pregnancy. In a perfect world, overweight women would get to their ideal weight before conception but losing weight is hard and not likely to be widely accomplished. With respect to weight gain during pregnancy, it was common practice decades ago for the obstetrician to admonish the pregnant woman if she were gaining too much, but obstetricians nowadays are loath to be scolding their patients.

The other clear risk factor for delivering a baby more than 4 kg is maternal diabetes. Women with diabetes have about a 20% chance of delivering a baby more than 4 kg. The main reason to treat diabetic women with oral hypoglycemics and/or insulin is to reduce the chance of third trimester stillbirth but, of course, treatment will also reduce the chance of macrosomia. Once a woman with diabetes has a fetus with impending macrosomia (abdominal circumference measurement of about 360 or so), delivery should be strongly considered, not so much to reduce the chance of shoulder dystocia but rather to reduce the chance of unexplained stillbirth. Some women during pregnancy do not have a degree of hyperglycemia that poses any significant risk of stillbirth, but, nevertheless, glucose-lowering treatment will reduce the chance of macrosomia and presumably shoulder dystocia.15 Whether it is desirable to treat a few dozen women with insulin to prevent one shoulder dystocia is unsettled.
With respect to prevention of shoulder dystocia, however, about 90% of cases occur in women who are not diabetic. About 50% of cases will occur in women whose baby weighs more than 4 kg. Ultrasound estimation of fetal weight is imprecise, but likely better than clinical estimation alone. An abdominal circumference of under 360 almost never indicates a fetus over 4,500 g. An abdominal circumference of 400 mm has a very high likelihood that the birth weight will be over 4,500 g. Between 360 and 400, there is a lot of inaccuracy. A frequently proposed remedy to reduce the chance of shoulder dystocia and its serious complications is to perform an elective cesarean section if the estimated fetal weight is 4,500 g or more. In Table 1, I have estimated what such an approach would mean for the population of the hospital that I work at.

One can see that one would have to perform some 600 extra cesarean sections to prevent one case of permanent brachial plexus injury. Of course shoulder dystocia can lead to fetal brain damage so it is possible that the 600 extra cesarean sections would also prevent the rare case of baby brain damage or death. Cesarean section is one of the safest operations in the world, but several hundred cesarean sections to prevent one bad outcome seems excessive to me although others may legitimately disagree and the mother may consider this a reasonable tradeoff. If one believes, for.

**Table 1: Estimated number of permanent BPI prevented by routine CS for fetuses greater than 4,500 grams.**

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>4,000–4,500 g</th>
<th>&gt;4,500 g</th>
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<tbody>
<tr>
<td>1. 100,000 births</td>
<td>13,000</td>
<td>2,000</td>
</tr>
<tr>
<td>2. 13,000 BW &gt;4,000 g; 15% CS in labor</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>3. 2,000 BW &gt;4,500 g; 30% CS in labor</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>4. 5% SD in 4,000–4,500 g group</td>
<td>1,400 vag del</td>
<td></td>
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<tr>
<td>5. 10% BPI with SD</td>
<td>600 CS in labor</td>
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<tr>
<td>6. 20% of BPI are permanent</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>7. US will identify all babies &gt;4,500 g</td>
<td>↓</td>
<td>↓</td>
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<tr>
<td>US will falsely identify 20% (N=2,600) of 4,000–4,500 g group as &gt;4,500 g</td>
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**Notes:** Policy of routine CS if >4,500 g results in 2,000+2,000=4,000 CS. Of these, 600 (15% of 2,600)=1,000 would have had a CS in labor. Therefore, 3,600 extra CS would have prevented 3 BPI in >4,500 g and 3 BPI in the 2,600 women in 4,000–4,500 g group who avoided attempted vaginal delivery.

**Abbreviations:** BPI, brachial plexus injury; BW, birth weight; CS, cesarean section; Perm, permanent; SD, shoulder dystocia.
example, that all breech presenting fetuses in labor should be delivered by cesarean section then one is implicitly accepting that doing several hundred cesarean sections to prevent one bad outcome is reasonable. Similarly, in a suitably chosen woman who is attempting a trial of labor after cesarean, the chance of a major catastrophe, namely, death or damage to the baby, is about 1 in 1,000 attempts. We allow women to choose elective repeat cesarean section for such a small risk; one then has to accede to a woman’s request for an elective cesarean section if the baby is thought to be too big.

One interesting attempt to try to better predict those instances where shoulder dystocia with injury might occur has been proposed.[16] The model essentially takes the estimated fetal weight with the maternal weight and height and calculates a risk of shoulder dystocia with injury. In this model, to prevent one case of shoulder dystocia with brachial plexus injury, I estimated that 27 extra cesarean sections would have to be performed. If one assumes that 20% of those injuries would be permanent, it comes to 135 extra cesarean sections to prevent a permanent injury. The model is promising, but still one is doing many cesarean sections to prevent one bad outcome.

A final approach to reducing the chance of macrosomia and shoulder dystocia is to induce labor early if the baby is thought to be getting too big. One prospective study has addressed the question of labor induction to prevent shoulder dystocia.[17] Instead of waiting to induce labor when the fetus was already thought to be 4 kg or more, induction was carried out between 36 and 39 weeks when the fetus was thought to be big clinically and on ultrasound. The authors demonstrated that the induction of labor group had a lower cesarean section rate (28% vs 32%) and that the rate of shoulder dystocia of any type was 4% vs 8%. In the induction group, the mean birth weight was about 300 g less. At first look, the results are impressive. Disconcerting, however, is that despite the fact that less than half the babies weighed over 4 kg and, 10% were more than 4,500 g, nevertheless, the overall cesarean section rate in the study was 30%. In a study carried out in my hospital 25 years ago[18] where all babies had a birthweight of 4,500 g or more, the cesarean section rate in women without a previous cesarean section was just over 20%. The problem with ultrasound estimation of fetal weight is that if one tells the obstetrician or the pregnant woman that the fetus may be big, that knowledge by itself will bias people to perform a cesarean section, either before labor or during labor if labor is going slower than expected.
Management Protocol Avoid the 4 P's. DO NOT!

1. Pull
2. Push
3. Panic
4. Pivot (i.e. severely angulating the head, using the coccyx as a fulcrum)

Given the inability to predict the occurrence of shoulder dystocia reliably, health care providers should be prepared for shoulder dystocia at all deliveries. Therefore, a management protocol must be in place and well known to all care givers. The ALARMER mnemonic has been developed to assist in the appropriate and consistent management of this unexpected complication. A Ask for help L Lift/hyperflex Legs A Anterior shoulder disimpaction R Rotation of the posterior shoulder M Manual removal posterior arm E Episiotomy R Roll over onto “all fours” Shoulder dystocia is not a maternal soft tissue problem. However, an episiotomy may facilitate the performance of the above manoeuvres by allowing for additional access. When shoulder dystocia is recognized, it is important to instruct the woman to delay pushing until manoeuvres to relieve the obstruction are carried out. Recent computer simulations using a model of a fetus whose shoulder is blocked by the maternal pelvis have demonstrated that some of the greatest brachial plexus stretching occurs with maternal pushing alone (Gonik et al, 2000; Gonik et al 2003).

Ask for help Planning
Set up unique systems for calling for help in obstetric emergencies to assure that appropriate equipment and personnel are available consistent with local circumstances.

Establish and practice a management protocol that includes all available health care providers. Post the protocol in the labour area so it is available to refer to during an emergency.

During the emergency
Ask for help from the woman, her husband or partner, relatives, or doula. Notify your assistant or backup to enlist other appropriate health care providers, including those health care providers skilled in neonatal resuscitation.
Lift the legs
Remove pillows from behind woman and help her move to a flat position in bed. Lower head of bed if elevated.
Hyperflex both legs (McRobert's manoeuvre, Figure 1).
Shoulder dystocia is often resolved by this manoeuvre alone. Figures 2 and 3 demonstrate the changes in the pelvic dimensions when the legs are flexed against the abdomen.

Figure 1- McRobert's manoeuvre.

Figure 2
Figure 3: Changes to the Pelvic Dimensions when the legs are hyperflexed.

Anterior disimpaction

Abdominal approach: Suprapubic pressure applied with the heel of clasped hands from the posterior aspect of the anterior shoulder to dislodge it (Mazzanti manoeuvre). Apply a steady pressure first and, if unsuccessful, apply a rocking pressure. Do NOT use fundal pressure.

In combination with the McRoberts manoeuvre, this will deliver the baby in 91% of cases (Lurie et al., 1994). It is useful to understand the lay of the baby, so as to apply pressure from the correct side and be most effective. It is also useful to have a stool in delivery area to facilitate this manoeuvre. It is important to be above the woman when performing suprapubic pressure.

**Vaginal approach:** Adduction of the anterior shoulder by pressure applied to the posterior aspect of the shoulder. The shoulder is pushed towards the chest, or pressure is applied to the scapula of the anterior shoulder Rubin manoeuvre. (Rubin, 1964).

![Rubin manoeuvre](image)

**Figure 5:** Rubin manoeuvre Copyright © The McGraw-Hill Companies, Inc. Labor and delivery. In: Cunningham et al. Williams obstetrics. 22nd ed. 2005.

These manoeuvres attempt to position the shoulders to utilize the smallest possible diameter of the fetus through the largest diameter of the woman. **Rotation of the posterior shoulder** Woods”” manoeuvre is a screw-like manoeuvre. Pressure is applied to the anterior aspect of the posterior shoulder, and an attempt is made to rotate the posterior shoulder to the anterior position. Success of this manoeuvre allows easy delivery of that shoulder once past the symphysis pubis. In practice, the anterior disimpaction manoeuvre and Woods”” manoeuvre may be done simultaneously and repetitively to achieve disimpaction of the anterior shoulder.
Figure 6 - Rotation of posterior shoulder: Step 1.

Figure 7 - Rotation of posterior shoulder: Step 2.

Figure 8 - Rotation of posterior shoulder: Step 3.
Manual removal of the posterior arm  The arm is usually flexed at the elbow. If it is not, pressure in the antecubital fossa can assist with flexion. The hand is grasped, swept across the chest and delivered, as shown in Figure 9. This may lead to humeral fracture, which does not cause permanent neurological damage.


http://www.who.int/reproductive-health/impac/Symptoms/Shoulder_dystocia_S83_S85_html

Roll over to “all fours” position: Gaskin manoeuvre  Moving the woman to "all fours" appears to increase the effective pelvic dimensions, allowing the fetal position to shift; this may disimpact the shoulders. With gentle downward pressure on the posterior shoulder, the anterior shoulder may become more impacted (with gravity), but will facilitate the freeing up of the posterior shoulder. Also, this position may allow easier access to the posterior shoulder for rotational manoeuvres or removal of the posterior arm (Bruner, et al, 1998; Baskett, 2004). Prior experience with delivery in this position is an asset (Lurie et al, 1994). This manoeuvre, as shown in Figure 10, may be considered earlier.
Figure 10 - Gaskin manoeuvre with rotation of posterior shoulder.

Episiotomy
Episiotomy is an option that may facilitate the Woods’’ manoeuvre or manual removal of the posterior arm by creating more room for the accoucheur’s hand. After McRobert’s manoeuvre, the sequence of manoeuvres may be individualized.

Other Manoeuvres If nothing has worked to this point and all the procedures have been tried again, then some health care providers have suggested:

1. *Deliberate fracture of the clavicle, as shown in Figure 11*
2. Symphysiotomy

The cartilage of the symphysis pubis (where the pubic bones come together) may be surgically divided to increase the size of the pelvic outlet (Menticoglou, 1990). This procedure is described in detail in Chapter 4, Management of Labour and Obstructed Labour.

3. Zavenelli manoeuvre: cephalic replacement

This manoeuvre involves reversing the cardinal movements of labour. The head is rotated to occiput anterior, as shown in Figure 12. Flex, push up, rotate to transverse, disengage, and perform a cesarean section (Sandberg).
After Shoulder Dystocia

1. Remember the SIGNIFICANT risk of maternal injury (tears) and postpartum hemorrhage.
2. Actively manage the third stage. Apply active management of the third stage of labour.
3. Inspect for and repair tears or lacerations.
4. Do cord blood gases, if this is the policy of your institution.
5. Ensure appropriate neonatal resuscitation and assessment; document all actions taken to resuscitate the newborn.
6. Examine the newborn for evidence of trauma. Document the occurrence of shoulder dystocia in the baby’s chart. Document Apgar scores and any bruising or injuries found on the initial newborn exam.
7. Re-examine the baby within 24 hours or at any time after the birth if concerns develop.
8. Document and describe the manoeuvres used, and, if possible, the time between the birth of the head to completion of the birth in both the mother’s and the baby’s charts.
9. Explain to the woman and all those involved in the delivery exactly what occurred and what management steps were taken. Advise her that she is at risk for another shoulder dystocia for her next pregnancy (15% recurrence after one dystocia and 30% after two shoulder dystocias).

**FOURTH EDITION OF THE ALARM INTERNATIONAL PROGRAM Shoulder**
RCOG Green Top Guideline No. 42 (RCOG 2012)

Complications
Shoulder dystocia is an obstetric emergency that may lead to complications for both the woman and her baby including:

Maternal
Genital tract trauma
- Increased rates of 3rdand 4th degree tears
- Uterine rupture
Symphysisal separation
Postpartum haemorrhage
Psychological distress/trauma

Neonatal
Brachial plexus injuries (e.g. Erb’s, Klumpke’s palsies)
Clavicular & humeral fractures
Fetal acidosis/hypoxia may lead to permanent neurological damage

- Fetal/neonatal death

Regular training for all health professionals attending births is essential for the reduction of these complications

PREVENTION
In cases of suspected macrosomia:
Without diabetes: Elective caesarean section is NOT indicated
With diabetes: Elective caesarean section may be considered following discussion with consultant obstetrician
In cases of maternal diabetes:
Maintain tight glycaemic control
Monitor weight gain during preconception and pregnancy care

CONCLUSION
1. Shoulder dystocia is a serious emergency. If it is not resolved, the baby can die or be brain damaged. If one acts impetuously and pulls on the head, the brachial plexus can be permanently injured.
2. The admonition has been made “do not pull hard, do not pull quickly, and do not pull down.” I believe that one should not pull AT ALL, neither to make the diagnosis of shoulder dystocia nor as part of the McRoberts’ maneuver or in conjunction with suprapubic pressure.

3. If the fetus is macrosomic or the mother is obese or diabetic, delivery should not take place in a birthing room but rather in an operating room.

4. Do not clamp and cut a nuchal cord.

5. Be prepared for the worst, including the need for symphysiotomy and general anesthesia.

6. Shoulder dystocia is diagnosed when the mother cannot push the shoulders out with the subsequent contraction. If an urgent vacuum or forceps delivery has been done for severe bradycardia or a terrible tracing, or if there is a strong presumption of shoulder dystocia because the chin is tight against the vulva, do not wait until the next contraction.

7. McRoberts’ position is fine; McRoberts’ maneuver pulling on the head, is not.

8. Put your hand in the vagina and find out if the posterior shoulder is in the sacral hollow or not.

9. If the posterior shoulder is in the sacral hollow, the most effective approach is to use posterior axillary traction, either with overlapping middle fingers or with a sling, and drag the shoulder along the sacral hollow until the shoulder and arm are delivered. The humerus will often fracture. This is unfortunate but not disastrous. Dozens of fractured humeri are better than one permanent brachial plexus injury with a useless arm.

10. If the posterior shoulder is not in the sacral hollow but is at the pelvic brim, the best maneuver is the Jacquemier maneuver and properly performed will almost always work.

11. If after 5 minutes or so, the shoulder dystocia has not been resolved, try to push the delivered head back into the vagina and if it goes in easily proceed to a cesarean section. If the head cannot be replaced easily, proceed to a symphysiotomy. Others would proceed to symphysiotomy instead of trying to replace the head.

12. After the baby is born, do not immediately clamp and cut the umbilical cord. Let a minute go by so that the baby can be autotransfused through the placenta and have the baby resuscitators start their resuscitating at the mother’s bedside.

Obstetric staff worry about this complication. Permanent damage is rare but can be disabling. There is every opportunity to learn from collective experience, which is well described and thoughtfully considered in the obstetric literature. There should be a written protocol in every labour ward and every member of the labour ward staff should be familiar with it.
REFERENCES


21. *FOURTH EDITION OF THE ALARM INTERNATIONAL PROGRAM*


