

DIFFICULTIES IN LABOUR DUE TO THE SHOULDERS¹

By R. G. M'KERRON, M.A., M.D.,
Obstetric Physician, General Dispensary; Assistant to the Professor
of Midwifery in the University, Aberdeen

DIFFICULTY in labour due solely to the size of the shoulders is so uncommon that the following cases may be of some interest.

CASE I. About 10.30 one evening I was sent for to see a woman in labour with her tenth child. Her previous confinements had been fairly normal. I found the os about one-half dilated. The membranes were unruptured, and there was a large quantity of forewaters. The presentation was high and difficult to reach, but the head could be made out above the brim. This was corroborated by abdominal examination, which, however, was difficult owing to œdematous infiltration of the abdominal wall. The abdomen was somewhat pendulous. The pains were good. She was left in charge of a student and a nurse, who ruptured the membranes about an hour and a half afterwards, when the head was at once driven down to the floor of the pelvis and began to distend the perinæum, the occiput under the arch of the pubis. It seemed as if the child would be born in a few minutes, but notwithstanding good pains the head remained in much the same position for an hour, when I was again sent for. I found the head on the floor of the pelvis, occiput under the arch. With a pain the occiput emerged, and it seemed as if the head would at once be born. It was arrested, however, just short of the suboccipito-bregmatic diameter, receding as the uterine contraction passed off. I waited for two or three pains, but though they were strong no progress was made. I put on the forceps. Great resistance was encountered in extracting the head beyond the point to which it had previously advanced, owing partly to its size and partly to the difficulty in getting the occiput low enough to permit of rotation round the pubic arch. When the head was delivered to the nose the forceps came off, and some trouble was experienced in getting the nose and chin over the perinæum. This was effected at last by the help of a finger in

¹ Read before the Aberdeen, Banff and Kincardine Branch of the British Medical Association, May 1900.

the rectum. But delivery was not yet over: the shoulders refused to enter the brim in spite of strong pressure from above—combined after a little with traction. While the nurse and student pressed the child downwards from the abdomen I pulled on the head, but the shoulders could not be made to advance. Suspecting that the obstruction was due to the large size of the shoulders and that the anterior was projecting over the symphysis, I directed the student to continue pressure on the fundus and the nurse to press the shoulders directly backwards from the symphysis. By this means delivery was soon completed. There was severe but not alarming hæmorrhage. No chloroform was given as the patient was suffering from bronchitis. The child was still-born and weighed twelve and a half pounds.

CASE II. Mrs M., a primipara, aet. 26, expected her confinement in the beginning of July, her last menstruation ending on September 27th. Labour did not begin till the afternoon of July 23rd. There had previously been little sinking of the abdominal tumour, though some had been noted in the end of June, when the head was found well engaged in the pelvic brim. For a few days preceding labour no foetal movements had been felt. On examining about 3 A.M. on the 24th I found the os more than half dilated, the membranes ruptured, the head in the first position and fairly low in the pelvis, thus showing an uncontracted brim. Good progress was made till the head reached the pelvic floor, where it was arrested, and at 9 A.M. the forceps were applied. With comparatively little effort the head was advanced till the anterior fontanelle reached the perinæal border, but the greatest difficulty was experienced in getting the forehead and face free. Even after they were liberated they tended to slip back, a fact which made me remark to the nurse that the shoulders would give us trouble. After delivery of the head an attempt was made to express the body in the usual way but failed. Traction on the head, and that combined with pressure on the fundus and pressure back on the anterior shoulder above the pubis, were tried for a considerable time but without success. I then sent for Professor Stephenson. Our joint efforts, however, were at first unavailing. While Dr Stephenson pulled on the neck, I assisted by

pressure on the fundus and backward on the anterior shoulder. Dr Stephenson then pushed his hand up to the brim, with a view to pull directly on the shoulder. This failing, he endeavoured to get down the arm, but this could only be effected with difficulty by the aid of the blunt hook. With one arm down we naturally imagined that our difficulties were over. Combined traction on the arm and neck with abdominal pressure still failed to get the shoulder through the brim. After several efforts, we determined to decapitate to allow of more room for manipulation. The other arm was then taken down by means of the hook. Even yet we were unable to get the body through the brim, and before this could be accomplished it was found necessary to eviscerate, first the thorax then the abdomen. The mother was naturally much exhausted by the prolonged process, but made a most satisfactory, though slow recovery, with only a slight rise of temperature for a few days.

Apart from the difficulty of extraction, this case presents one or two features which are interesting from an obstetric point of view. There can be no doubt, I think, that in this case pregnancy was abnormally prolonged. This conclusion seems justified not only by the ordinary methods of calculation, but by the large size of the child. The unusual development is not to be explained by the size of the parents, for the mother was short and slight, while the father though well built was not over average height or weight. In prolonged gestation, where the intra-uterine development is excessive, the shoulders, as pointed out by Herman,¹ are larger in comparison with the head than is normal. The extreme difficulty, however, experienced in extracting the trunk was only partly due to the large size of the child. It was caused partly by an œdematous almost indurated condition of the subcutaneous tissues, which gave the body an undue rigidity and interfered with the normal compressibility of the shoulders. The exact cause of this condition I do not know. Unfortunately it did not occur to me at the time to have the tissues microscopically examined. Throughout pregnancy the urine was free from albumin, which excludes one of the recognised causes of anasarca in the foetus. Rigor mortis may have been a

¹ "Difficult Labour," p. 103.

factor in the condition of the child's tissues, but, on the whole, the most probable explanation is that, owing to the undue prolongation of pregnancy, the thrombotic changes in the placenta which normally precede labour had advanced to an unusual degree and interfered with the foetal circulation—at the same time producing the anasarca and causing the death of the foetus. The child, which had been dead for some days, weighed, as nearly as could be computed, twelve pounds.

Delivery of the shoulders is, in ordinary circumstances, so easily effected, that any obstruction after the birth of the head occasions the practitioner much unexpected annoyance, in addition to exposing the child to great risk. It may be well, then, if I review shortly the conditions in which the shoulders may be arrested and the various methods of overcoming the difficulty.

Arrest of the shoulders implies a disproportion between them and the pelvic canal. This may be of two kinds, causally different, but identical from the point of view of treatment, so that we shall make no distinction between them.

(1) The pelvis may be contracted and the child of average size ; though it is surprising how seldom the shoulders occasion trouble even in marked narrowing. (2) The pelvis may be normal while the child is excessively developed, as in the cases I have related.

The first difficulty that is encountered, when the shoulders are relatively too large for the brim, is an interference with normal mechanism at the parturient outlet. Normally, as you are aware, the shoulders have passed the brim when the head is emerging from the vulva. When the shoulders are arrested at the brim the head is prevented from descending sufficiently, so that the exit of the head is delayed and may be difficult. Arrest, though it may take place earlier, most usually occurs when the sub-occipito-bregmatic diameter—or just short of it—has passed the vulvar opening. Even with the forceps further advance may be resisted, and this should always suggest arrest of the shoulders above the pubis. There is practically only one other condition which gives rise to the same difficulty, though in a minor degree, namely, shortness of the umbilical cord—relative or absolute. Of the latter I have seen one instance.

The treatment in this condition is to direct an assistant to press the anterior shoulder downward and backward with the two-fold view of compressing the bisacromial diameter and of bringing it, by forcing the shoulder off the pubis, into a longer diameter of the brim. This may be done during the pains and allow of spontaneous delivery, or during traction with the forceps.

In excessive development of the fœtus the difficulty in delivering the head, due to the above cause, is not so serious as that occasioned by the shoulders. It is to the obstruction we may meet with after the delivery of the head that I wish more especially to direct your attention.

Obstruction to the birth of the shoulders may take place either at the brim or in the cavity of the pelvis, and it is necessary to distinguish these as the treatment differs somewhat.

If the obstruction occurs at the brim, our aim must be to get the bis-acromial diameter into the longest diameter of the pelvic inlet, by pressing the anterior shoulder backwards from above the symphysis pubis. Combined with traction on the neck—directed well back on the perinæum—this will succeed in the easier cases. When it fails an attempt should be made to hook the index finger into the axilla, and thus to pull the shoulder through the brim. Should this prove unsuccessful, the blunt hook may be substituted for the finger. With finger or hook, traction on the neck and pressure on the fundus should always be combined. Another method of dealing with these cases is to take down one or both arms, which not only diminishes the bulk of the shoulders, but gives a better purchase. After getting down one arm greater freedom of manipulation may be obtained by decapitation, where the child is known to be dead.

Bonnaire¹ has recently suggested division of one or both clavicles in these cases. This can be easily effected with a sharp scissors, and diminishes the bis-acromial circumference, according to Bonnaire, by 9 to 10 cm., about $3\frac{1}{2}$ inches. In experimenting on a small— $5\frac{3}{4}$ lbs.—child, which had been in spirit for several months, I found that division of one clavicle gave a diminution in the shoulder circumference of $\frac{3}{4}$ inch,

¹ *Presse Méd.*, April 1900.

division of both clavicles a diminution of $1\frac{1}{2}$ inches. The discrepancy as compared with Bonnaire's results may be due to the small size of the child operated on.

When the shoulders pass the brim, as, even when large, they sometimes do seemingly without difficulty, they may become impacted in the pelvis and resist all efforts to dislodge them. This is a more common form of obstruction. The various expedients I have described may be here employed; but first, if the child is living, an endeavour should be made to deliver by traction with the finger in the axilla. This must be directed well back, the object being to bring the shoulder down under the pubic arch, which at once gives more room and usually renders extraction easy. If this method fail, an opposite procedure should be tried before resorting to the hook, namely, to push up the anterior shoulder above the symphysis, then to pull down the posterior. This has been successful in some cases. Where the child is dead, one or both clavicles should be divided. This operation, termed cleidotomy, has, so far, been performed only on the dead fœtus after cephalotripsy. Bonnaire thinks, however, that it might safely be employed on the living child. In none of his experimental operations were the subclavian vessels or muscles injured.

Seeing that the most common cause of excessive development of the fœtus is abnormal prolongation of pregnancy, the question naturally arises whether in these circumstances it is advisable to artificially bring on labour. No doubt in both our cases this would have resulted in the birth of a living child, while in the second it would have saved the mother from the injuries and risks incidental to a prolonged and difficult labour. Personally I should be disposed, in the light of the above experiences, to agree with Hirst,¹ who recommends it as a good rule of practice to allow no woman to exceed the normal duration of pregnancy by more than two weeks. "By inducing labour at that time," he concludes, "one will occasionally interfere unnecessarily, but he will often avoid complications and difficulties of the most serious nature."

Cases like those I have related are the source of so much

¹ "American Text-book of Obstetrics," Norris, p. 561.

annoyance to the practitioner that I have been led to dwell at considerable, but I hope not unnecessary, length on their causation and treatment.