The Midwife.

Artificial Rupture of the Membranes.

Dr. Stanley Colyer, M.D., Lond., late House Physician to the General Lying-in Hospital, York Road, contributes an original article on "The Relation between the Time of Rupture of the Fœtal Membranes and Lacerations of the Cervix Uteri," to the *British Medical Journal* of November 20th, 1909. His conclusion that the degree of dilatation of the os determines for the most part the degree of laceration of the cervix is based on the study of 164 primiparous cases, in which vaginal examinations were made on the tenth day of the puerperium. The avowed object of the investigation is to discover if the present methods of conducting labour are correct, so as to formulate definite rules for the guidance of midwives.

The generally accepted teaching is that the membranes may be ruptured artificially, when the os is fully dilated, *i.e.*, when the cervix is completely drawn up, but in practice many midwives do hasten the delivery in normal cases by artificial rupture before that point is reached; some obstetricians have taught that the membranes may be ruptured when the os admits three fingers, if there is no danger of obstruction. Dr. Colyer's statistics go to prove that this is less disastrous to the cervix than rupture when the os is almost fully dilated.

The cause of spontaneous premature rupture of the membranes is often obscure; but in cases of breech and shoulder presentations and contracted pelvis, the ball valve action of the head which cuts off the fore-waters from the back-waters is wanting, hence the membranes are subjected to direct intra-uterine pressure; if then those are correct who maintain that until full dilatation the bag of fore-waters is not subjected to direct uterine pressure the frequency with which spontaneous rupture takes place at full dilatation is explained. "So long," says Dr. Colyer, "as the dilatation of the cervix remains less than the greatest circumference of the presenting part, so long will the ball valve action hold good; but once the circumference becomes the least degree the longer of the two it will cease, and the maximum intra-uterine pressure will be transmitted to the fore-waters suddenly and for the first time, and will as a rule be a greater strain than the membranes can resist."

In cases where the membranes rupture late in the first stage, the head is grasped tightly by the partially dilated cervix, the pains tend to become second stage in character, one or two strong pains may suffice to drive the head through the os, the force and frequency of the contractions increase with the result that the os is dilated too rapidly, some laceration is inevitable, deep laceration is very probable. The following statistical table shows this to be the case:—

	Number of cases.	Aver. Age.	Percentage of Cervical Lacerations. Extent of Laceration.	Right Side.	Left Side.
			Slight	49.39	46.93
All cases ...	164	23.17	Moderate	15.24	17.07
			Deep	6.09	12.18
Spontaneous rupture:					
Os fully			Slight	48.48	48.48
dilated ...	33	21.16	Moderate	3.03	21.21
			Deep	6.06	9.09
Artificial rupture:					
Os fully			Slight	54.34	41.32
dilated ...	46	22.8	Moderate	19.56	36.95
			Deep	6.52	15.21
Spontaneous and artificial rupture:					
Os "almost			Slight	36.36	27.27
fully dilated"	11	23.52	Moderate	36.36	18.18
			Deep	9.09	45.45
Os not more					
than 5-shil.			Slight	50	75
piece ...	8	21.5	Moderate	25	12.5
			Deep	0	12.5

The percentage of deep lacerations in cases in which the os was "almost fully dilated" is extremely high, those of the left side being 45 per cent.; this is to be contrasted with the lacerations when the os was not more than a five shilling piece in size when the membranes ruptured—12½ per cent. This is explained by remembering that the dilatation is slow when this occurs until the cervix is of such a size as to admit the presenting part; there is no such marked difference in the force and frequency of the contractions as in cases of rupture, when the os is almost fully dilated, there is not, as Dr. Gill points out in a note, any sudden increase in pressure.

If the largest circumference of the head has passed through the cervix at the time of rupture of the membranes, the lacerations will be slight. It is, therefore, to be concluded that artificial rupture should not be undertaken without very definite indications; if such in-

previous page next page