

PROMPT SHOULDER DYSTOCIA MANAGEMENT AND INCIDENCE OF PERINEAL TEARS III°/IV°

S Papageorgiou¹, L Brodowski¹, H Lewinski¹, B Bohnhorst², M Flentje³, C von Kaisenberg¹

¹Department of Obstetrics, Gynecology and Reproductive Medicine
²Department of Neonatology, Medical School of Hannover
³Department of Anaesthesiology, Medical School of Hannover

Introduction

To determine if the introduction of PRACTICAL OBSTETRIC MULTI PROFESSIONAL TRAINING (PROMPT) at the Hannover Medical School – which has been shown before to reduce brachial plexus palsy, birth asphyxia and improve neonatal outcomes – can additionally reduce injury to the mother (III° and IV° perinatal tears).

Methods

All mothers and infants born during the 16 years from January 1st 2004 until December 31st 2019, were identified using a computerized database. Deliveries from January 1st 2004, and November 8th 2017, were from before the training. The period from November 9th 2017 until 31st December 2019 was after the implementation of training. All professional Groups involved in labour and childbirth (40 obstetricians, 42 midwives, 4 neonatologists, 4 paediatric nurses, 7 anaesthetists, 6 anaesthesia nurses, and 6 theatre nurses) participated in the training. The study compared the period ‘before the training’ and ‘after the training’ about the number of shoulder dystocia cases, brachial plexus injuries, asphyxias, adverse outcomes as well as the frequency of the manoeuvres performed. In particular the numbers of perineal tears grades III & IV, episiotomies and vaginal operative deliveries were compared.

Results

The number of shoulder dystocia cases increased from 27 to 50 per 10,000 births (P=0.017)

Shoulder dystocia total cases	Groups		Total
	Before	After	
No	17,983 (99.73%)	4,586 (99.50%)	22,569 (99.69%)
Yes	48 (0.27%)	23 (0.50%)	71 (0.31%)
Total	18,031 (100%)	4,609 (100%)	22,640 (100%)

The number of BPIs decreased from 7 to 1 case (P=0.261), while the number of permanent BPIs reduced to zero.

Total brachial plexus Injury (BPI)	Groups		Total
	Before	After	
No	41 (85.4%)	22 (95.7%)	63 (88.7%)
Yes	7 (14.6%)	1 (4.3%)	8 (11.3%)
Total	48 (100%)	23 (100%)	71 (100%)

The incidence of perinatal asphyxia increased from 6.3% to 17.4% (P=0.23).

Total cases complicated with asphyxia	Groups		Total
	Before	After	
no	45 (93.7%)	19 (82.6%)	64 (90%)
Yes	3 (6.3%)	4 (17.4%)	7 (10%)
Total	48 (100%)	23 (100%)	71 (100%)

The one-year outcomes for adverse effects of asphyxia reduced from 33% to zero.

Adverse outcome after one year	Groups		Total
	Before	After	
no	2 (66.7%)	4 (100%)	6 (85.7%)
yes	1 (33.3%)	0 (0%)	1 (14. 3%)
Total	3 (100%)	4 (100%)	7 (100%)

The use of McRoberts’ manoeuvre increased from 77.1% to 100% (P=0.013)

McRoberts’ manoeuvre	Groups		Total
	Before	After	
No	11 (22.9%)	0 (0%)	11 (15.5%)
Yes	37 (77.1%)	23 (100%)	60 (84.5%)
Total	48 (100%)	23 (100%)	71 (100%)

The initiation of episiotomy substantially decreased from 29.2% to 18.1% (P<0.001)

Episiotomies	Groups		Total
	Before	After	
No	12,764 (70.8%)	3,773 (81.9%)	22,509 (73%)
Yes	5,267 (29.2%)	836 (18.1%)	131 (27%)
Total	18,031 (100%)	4,609 (100%)	22,640 (100%)

The number of perineal tears grades III & IV increased from 0.5% to 0.85% (P=0.007)

Perineal tears grades III & IV	Groups		Total
	Before	After	
No	17,939 (99.5%)	4,570 (99.15%)	22,509 (99.4%)
Yes	92 (0.5%)	39 (0.85%)	131 (0.6%)
Total	18,031 (100%)	4,609 (100%)	22,640 (100%)

Conclusions

There was a reduction in the episiotomies but an increase of perineal tears grades III & IV. Other factors such as an increase in diabetes, in obesity and in mean maternal age and labour induction should be considered and may be related to the results.

The implementation of the PROMPT concept after only 2½ years, was associated with a significant improvement in the management of shoulder dystocia. These results show, albeit somehow preliminary, a very promising impact of the training and are the study's most important findings. Ongoing repetitive practical training is, however, required to make these results sustainable.