

EVALUATION OF THE KNOWLEDGE OF PHYSICIANS AND RESIDENT GYNECOLOGISTS AND OBSTETRICIANS ON SHOULDER DYSTOCIA

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ABSTRACT

Shoulder dystocia (SD) is an obstetric emergency and can bring serious complications for both the mother and the newborn, and it is extremely important that the physician and their team are prepared to recognize and treat this situation in the best possible way. In this context, practical training on the topic, such as that offered by Advanced Life Support in Obstetrics (ALSO), is essential. **Objective:** To evaluate the knowledge of specialized physicians and obstetrics residents on the conduct and management of shoulder dystocia. **Method:** This is a cross-sectional, descriptive study, conducted in maternity hospitals and hospitals in Anápolis and Goiânia. The population included specialized physicians and residents working in the obstetrics area. Data were collected through an authorial questionnaire and tabulated in an Excel spreadsheet. For subgroup analysis, the Chi-square and Fisher's tests were used. **Results:** 38 questionnaires were collected, 19 from physicians and 19 from residents. Of these participants, 63% had already undergone some practical training in SD, but only 39% had participated in any ALSO course. Low percentages of knowledge were identified in the mnemonic (34%), in part 2 (57%), and in the second section of part 3 (52%) of the questionnaire. In subgroup analysis, both residents and those who had training in SD showed greater knowledge of the maneuvers. **Conclusion:** The participants' knowledge regarding SD maneuvers was lower than expected, being higher in the resident population. Furthermore, a significant impact of SD training on better performance in the questionnaire was observed.

Keywords: Shoulder dystocia; Health Professionals; Simulation Training

INTRODUCTION

Shoulder dystocia (SD) is an obstetric emergency and occurs due to the impaction of the fetal anterior shoulder behind the maternal pubic symphysis after the delivery of the head¹. This event can occur in 0.2 to 3% of vaginal births, identified by the presence of the following parameters: 1) failure in the presentation of the fetal shoulders using only gentle downward traction during vaginal delivery; 2) requirement of additional maneuvers for successful vaginal delivery; 3) head-to-body interval (interval between cephalic detachment and biacromial detachment) greater than 1 minute².

Among the risk factors related to shoulder dystocia are, mainly, fetal macrosomia, gestational diabetes, and a history of previous pregnancy with complication from this event. However, most cases occur without a known risk

factor^{1,3}. The main complication for the mother is postpartum hemorrhage. For the fetus, there is a risk of brachial plexus injuries (BPI), clavicle and/or humerus fracture, perinatal asphyxia, hypoxemic complications, and even mortality⁴.

In this sense, training and simulation exercises are extremely important, as they considerably improve the performance of the physician and the team in the face of shoulder dystocia and reduce maternal-fetal morbidity and mortality, since they allow for early identification of the event and the effective use of necessary maneuvers, such as the McRoberts maneuver (knee to chest), suprapubic pressure, posterior release of the arm or shoulder, and internal rotation maneuvers⁵. Therefore, training through courses such as ALSO (Advanced Life Support in Obstetrics) is indispensable in obstetrics teams⁶.

Given this scenario, knowledge about SD can be decisive for the prevention and management of complications arising from this obstetric emergency. In this sense, the objective of the study was defined as evaluating the knowledge of specialized physicians and obstetrics residents on the conduct and management of shoulder dystocia.

METHODOLOGY

This is a cross-sectional, descriptive study of a quantitative nature conducted in the municipalities of Goiânia and Anápolis. The research sites were: Hospital Estadual da Mulher; Hospital e Maternidade Dona Íris; Maternidade Nascer Cidadão; Maternidade Dr. Adalberto Pereira da Silva; Hospital Santa Casa da Misericórdia de Anápolis. The study population consisted of specialized physicians or residents working in the obstetrics area, excluding those who did not sign the Free and Informed Consent Form and who answered the questionnaire unsatisfactorily.

For data collection, a questionnaire composed of 3 parts was applied: the first regarding the identification and technical training of the participant, the second evaluating the practical knowledge of SD maneuvers, and the third evaluating theoretical knowledge about SD (first section) and about SD maneuvers (second section). Data were tabulated in an Excel spreadsheet and worked using mean and standard deviation. For comparison purposes, two subgroup analyses were created, one comparing residents with specialized physicians and another comparing

participants who had or had not participated in practical SD training. These data were analyzed with Pearson's Chi-square test and Fisher's exact test, with $p < 0.05$ indicating statistical significance. The research was submitted and approved by the Research Ethics Committee under: CAAE 81935624.6.0000.5076 with opinion number 7.021.190.

RESULTS

38 participants were included for the study, 50% being specialist physicians and the other 50% obstetrics residents. The mean and standard deviation of age was 33.35 ± 7.87 years. Regarding training in obstetrics, 68.2% of participants had already undergone theoretical and practical training, mainly on the topics of assisted vaginal delivery (71%), postpartum hemorrhage (68%), and shoulder dystocia (63%).

Regarding the ALSO training course, it was seen that 97.37% of participants knew about the course, but only 39.47% of them had already participated in any theoretical or practical training of the course. When verifying the level of knowledge of the ALEERTA mnemonic, used by ALSO to guide the conduct of SD, it was observed that 47.3% of participants left this part of the questionnaire blank and only 34.21% showed adequate knowledge of the mnemonic (more than 5 of the 7 letters correct).

When analyzing the management of shoulder dystocia in this population, it was seen that less than half stated they had used the ALEERTA mnemonic to guide their conduct. Furthermore, it was observed that the most used maneuvers were McRoberts (73.6%), Rubin I (47.37%), Gaskin (31.5%) and Rubin II (28.9%). Finally, it was reported that the majority (42.11%) of the studied population managed to resolve the SD with 2 maneuvers, and that the average resolution time for SD was 4 ± 3 minutes.

Regarding the evaluation of theoretical knowledge of SD and the theoretical and practical knowledge of the maneuvers, an average percentage of correct answers of 57% was seen in part 2, 71% in the first section of part 3, and 52% in the second section of part 3 of the questionnaire.

In the subgroup analysis comparing physicians and residents, it was seen that there was no significant difference regarding participation in any practical training in

SD ($p=0.07$). However, the physician population obtained a statistically lower average percentage of correct answers than residents in part 2 ($p=0.028$) and in the second section of part 3 of the questionnaire ($p=0.034$). Also, it was observed that there was no significant difference in the percentage of physicians and residents who got more than 5 letters of the mnemonic correct ($p=0.3$) and in the average percentage of correct answers in the first section of part 3 of the questionnaire ($p=0.5$). Furthermore, there was no significant difference in the participants' confidence for managing SD ($p=0.17$).

Finally, when analyzing the subgroup that underwent practical training in SD, it was observed that the population that had already participated in this training, compared to those who had never participated, obtained a significantly higher percentage of participants getting more than 5 letters of the mnemonic correct ($p=0.07$), in addition to a statistically higher average percentage of correct answers in part 2 and in the second section of part 3 of the questionnaire (both $p<0.001$). However, the impact of practical training did not significantly affect the participants' confidence for managing SD ($p=0.26$) or the average percentage of correct answers in the first section of part 3 of the questionnaire ($p=0.42$).

CONCLUSION

It is concluded that, although the vast majority of specialized physicians and residents in the obstetrics area have already participated in some training on shoulder dystocia, a percentage of correct answers below expectations ($<70\%$) was observed, especially regarding knowledge of the SD conduct mnemonic and the practical and theoretical evaluation of SD maneuvers. However, participants showed adequate knowledge of the theory involving SD. Furthermore, during the subgroup analysis, it was found that confidence for managing SD and adherence to practical SD training showed no difference between physicians and residents, but the physician population showed less knowledge of the use of the maneuvers. Also, the positive impact of practical training in SD on improving the practical and theoretical knowledge of health professionals regarding the use of maneuvers necessary for managing SD was evidenced.

Some limitations affected the validation of the results, such as the reduced sample, in addition to some questionnaires filled out incompletely or with consultation. One challenge encountered was adherence to the research due to the complicated questionnaire, and the low availability and receptiveness during the applications, mainly regarding the specialist physician population.

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REFERÊNCIAS BIBLIOGRÁFICAS

1. Alves ÁLL, Nozaki AM, Polido CBA, Knobel R. Management of shoulder dystocia: Number 7 – July 2022. *Rev Bras Ginecol Obstet.* julho de 2022;44(07):723–36.
2. Davis DD, Roshan A, Varacallo M. Shoulder Dystocia. Em: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 [citado 11 de setembro de 2024]. Disponível em: <http://www.ncbi.nlm.nih.gov/books/NBK470427/>
3. Matthes ACS. Distocia de ombro: erro médico? Subsídios da literatura médica para uma defesa. *Femina.* março de 2010; 38 (3).
4. Sentilhes L, Sénat MV, Boulogne AI, Deneux-Tharoux C, Fuchs F, Legendre G, et al. Shoulder dystocia: guidelines for clinical practice from the French College of Gynecologists and Obstetricians (CNGOF). *Eur J Obstet Gynecol Reprod Biol.* agosto de 2016;203:156–61.
5. Hill DA, Lense J, Roepcke F. Shoulder Dystocia: Managing an Obstetric Emergency. *Am Fam Physician.* 15 de julho de 2020;102(2):84–90.
6. McGready R, Rijken MJ, Turner C, Than HH, Tun NW, Min AM, et al. A mixed methods evaluation of Advanced Life Support in Obstetrics (ALSO) and Basic Life Support in Obstetrics (BLSO) in a resource-limited setting on the Thailand-Myanmar border. *Wellcome Open Res.* 28 de junho de 2021;6:94.