ORIGINAL ARTICLE

To Determine the Frequency of Shoulder Dystocia among Patients Delivering in Moula Bakhsh, DHQ Teaching Hospital, Sargodha

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ABSTRACT

Background: A complication of cephalic vaginal deliveries in which fetal shoulders don't deliver after the head delivered is known as Shoulder dystocia (SD) also is explained as a delivery that demands additional obstetric maneuvers to release the shoulders when gentle downward traction has failed. It usually happens when anterior shoulder impacts under the maternal pubic symphysis. This is an unpredictable condition but certain patients are at high risk of having shoulder dystocia.

Aim: To determine the frequency of shoulder dystocia among patients delivering in tertiary care hospital.

Study Design: Descriptive case series.

Setting: Department of Obstetrics & Gynecology, Govt. Moula Baksh, DHQ Teaching Hospital Sargodha.

Duration of study: 6 months from 10 September 2016 to 09 March 2017.

Methods: Total 387 females fulfilling selection criteria were enrolled for this study. Informed consent was taken, demographics data was noted. All the patients who had shoulder dystocia were categorized and data was entered in SPSS version 20.

Results: In our study patients having mean age 29.77 with S.D 7.04, Range from 15 to 45 years. Patients having mean gestational age of 38.74 with S.D 1.94. Range from 37 to 42 weeks. The mean BMI of the patients was 27.91 S.D 3.98 with a range from 22 to 45 BMI, and the mean parity of the patients was 2.98 almost 3 and S.D 1.07. It was seen that, out of 387 women 17 (4.4%) women showed the Shoulder Dystocia

Conclusion: This data on the information regarding shoulder dystocia and the risk factors associated with it in the local population in our region might helpful for the obstetric care providers for consultation to the patients and to prepare the guidelines to decrease the risk of shoulder dystocia.

Keywords: shoulder dystocia, obesity, GDM.

INTRODUCTION

Shoulder dystocia was first explained in 1730 and is unique and unpredictable obstetric complication of cephalic vaginal deliveries in which the fetal shoulders do not deliver after the delivery of head. It is explained as a delivery that needs additional obstetric maneuvers for the delivery of shoulders when gentle downward traction has failed. It occurs when either the anterior or, less commonly, the posterior fetal shoulder impacts under the maternal pubic symphysis or sacral promontory[1].

Certain risk factors are identified in patients having shoulder dystocia i.e. if there is history of shoulder dystocia in a previous delivery, Diabetes/impaired glucose tolerance, Fetal macrosomia, operative vaginal delivery, Excessive weight gain, Obesity, Asymmetric accelerated fetal growth in nondiabetic patients , Prolong pregnancy, Parity and abnormal pelvic anatomy.[2-3] In spite of these well-defined risk factors, shoulder dystocia is still impossible to predict because it can occur in patients with no risk factors and most of the patients with multiple risk factors do not experience it at all.[4] so considering this as an obstetrical emergency certain fetal and maternal techniques are identified to overcome this complication i.e., suprapubic pressure, mcrobert's position, delivery of

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posterior arm first, woodscrew maneuver and moving to all four position. This will reduce the head to body delivery interval because if this emergency not dealt in competent manner it can cause fetal and maternal harm because cord pH drops by increasing head to body delivery interval but does not become significant if it is less than 5 minutes[5].

Leung et al conducted a study regarding shoulder dystocia in which perinatal outcomes of shoulder dystocia alleviated by different type and sequence of manoeuvres is compared. This was observed that Mcrobert maneuver was having less perinatal complications in 25% cases and posterior arm delivery was having less complications in 63.6 % cases[5]. Complications which were noted in this study were Brachial plexus injury (BPI) 7.8%, Humeral Fracture (HF) 0.0% and Clavicular Fracture CF 3.9%.

The aim of our study was to identify the risk factors in patients having shoulder dystocia so that proper measure can b devised to prevent and overcome this complication.

MATERIAL AND METHOD

This descriptive case series was conducted in the Department of Obstetrics& Gynecology, Govt Moula Baksh, DHQ Teaching Hospital Sargodha during six months from 10 September 2016 to 9 March 2017. Non-probability consecutive sampling technique was used.

Inclusion Criteria:
- Age 15-45years
- All vaginal deliveries

- Singleton pregnancy on USG.
- Gestational age 37-42 weeks as assessed by last menstrual period
- Parity <5.

Exclusion Criteria: Patients with fetal malpresentation i.e., any presentation other than cephalic e.g. breech, shoulder.

Data collection: After taking approval from ethical committee of the hospital this study was started and 387 patients fulfilling the inclusion criteria and delivering in hospital were enrolled. After taking informed consent demographic data was noted. The patients/care takers were informed about clinical condition and the procedures to be done. And in case of shoulder dystocia was managed according to standard protocol. All the information were recorded on a predesigned Proforma. Frequency was recorded.

Data analysis: SPSS version 20 was used to enter the data and analysis was held. Descriptive statistics (Mean and standard deviation) were analyzed for quantitative variables such as gestational age, parity and BMI. Whereas, Frequency and percentages were calculated for qualitative variables like shoulder dystocia, gestational diabetes. Effect modifier like gestational age, gestational diabetes, parity obesity, were controlled by stratification of data. A test named as Post stratification chi square was applied. Statistically significant P-value that is 0.05.

RESULTS

The mean age of the patients was 29.77 and S.D 7.04 with a range from 15 to 45 years. The average gestational age of the patients was 38.74 and S.D 1.94 with range of 37 to 42 weeks. The mean BMI of the patients was 27.91 and S.D 3.98 with a range from 22 to 45kg/m^2 , and the mean parity of the patients was 2.98 almost 3 and S.D 1.07.

It was seen that, out of 387 women, 17 (4.4%) women showed Shoulder Dystocia and 370(95.6%) delivered normally. It was also observed that 129(33.3%) suffered from gestational diabetics out of the total subjects.

When patients were grouped in different categories with respect to age, gestational age and BMI it was seen that 202(52.2%) women aged form 15-30 years and 185(47.8) were among form 31-45 years and it was noted that a majority of the women 331(85.5%) having gestational age from 37-40 weeks but only 56(14.5%) were gestational age from 41-42 weeks. BMI ranged from 22-30, in 282(72.9%) women and 105 (27.1%) were form 31-35 BMI.

To check the effect of modification, Chi-Square was applied and was observed that stratified age and gestational diabetics were highly linked with shoulder dystocia but stratified gestational age and stratified BMI having no linkage to shoulder dystocia.

Table 1: Shoulder Dystocia Frequency

Shoulder Dystocia	Frequency	%age
No	370	95.6
Yes	17	4.4
Total	387	100.0

Table 2: Frequency of Gestational diabetics

Shoulder Dystocia	Frequency	%age
No	258	66.7
Yes	129	33.3
Total	387	100.0

Table 3: Descriptive Statistics

	N	Mean	Std. Deviation
Age in Years	387	29.7752	7.04270
Gestational Age	387	38.6331	1.59654
BMI	387	27.8682	3.88576
Parity	387	2.98	1.076
Valid N (list wise)	387		

Table 4: Gestational diabetics' vs. Shoulder Dystocia

Crosstab			
Count			
Gestational diabetics	Shoulder Dystocia		Total
	No	Yes	
No	258	0	258
Yes	112	17	129
Total	370	17	387

P value 0.000

Table 5: Stratified Age vs. Shoulder Dystocia

Crosstab			
Count			
Stratified age	Shoulder Dystocia		Total
	No	Yes	
15-30 Years	198	4	202
31-45 Years	172	13	185
Total	370	17	387

P value 0.016

Table 6: Stratified gestational age vs Shoulder Dystocia

Crosstab			
Count			
Stratified gestational age	Shoulder Dystocia		Total
	No	Yes	
37-40 Weeks	316	15	331
41-42 Weeks	54	2	56
Total	370	17	387

P value 0.746

Table 7: Stratified BMI vs Shoulder Dystocia

Crosstab			
Count			
Stratified BMI	Shoulder Dystocia		Total
	No	Yes	
22-30 BMI	269	13	282
31-35 BMI	101	4	105
Total	370	17	387

P value 0.733

DISCUSSION

Mostly, the obstetric emergency that is unpredictable and not preventable might summon trepidation among the obstetric care providers.

Literature depict the range of shoulder dystocia is 0.13% to 13.7%[6,,7]. The frequency of shoulder dystocia was 4.4% in our study, which was lower to study of Beall MH et al[6] and near to study of *Nesbitt et al* that reported 3.0%[7].

The Patient's mean age was 29.77 years ± 7.0 standard deviation. In the study out of all sample, the deliveries occurred at 37–40 weeks of gestation were 85.5%, at 41–42 weeks of gestation were 14.5%. In deliveries that occurred at 37–40 weeks of gestation, incidence of shoulder dystocia was 4.5% and in deliveries that occurred at 41–42 weeks of gestation the SD was 3.5%, the pattern of overland EA et al study showed that proportion of deliveries tangled with shoulder dystocia increased as pregnancy length at delivery[3] increased. but our pattern was different and results near to Al-Khaduri MM et al[8].

In pregnancies involving gestational diabetes mellitus (GDM) our results showed 33.3% (129/387) GDM in patients, study of Khuhro BN et al showed low result 15% GDM in patients[9] and our results were closed to Jiwani A et al study which is 28%[10]. Out of these 13.1% (17/129) had SD of the deliveries and Nadir S et al study shows lower results of SD 1.1%[11] in patients and Al-Khaduri MM study shows high results 36% of SD in patients of GDM[8].

In our study results of BMI were calculated of all patients results showed 27.1% (105/387) had high obesity same results reported by Jaleel R 28.8%[12]. Globally, more than 30 kg/m^2 in body mass index is accepted as obesity and BMI 25-29.9 kg/m^2 is defined as overweight[13]. Females, above 30 years counted as 47% and 82% of females that are married were obese[14] this result documented by a study done by a public sector hospital of Karachi. Most probably, staying at home, less physical inactivity, sugar and fat rich diet is the main cause of obesity in our urban female population.

In our study shoulder dystocia was 3.8% (4/105) in obese patients, these results was near to study of *Jaleel R* that reported 4.0% in obese pregnant women at Karachi, Pakistan[12]. High birth weight baby is a risk that is increased due to the factors including excessive weight gain in pregnancy and maternal obesity. Furthermore, this birth weight of offspring is related to shoulder dystocia. Risk of shoulder dystocia might increase due to the factors like maternal obesity and excessive weight gain during pregnancy[15-16].

Sama et al, Case-control study had been performed that covered 62 cases of shoulder dystocia[17] in 1998 and resulted that shoulder dystocia is linked with high maternal bodyweight. However, case-control study done by Gemer et al published a year later and found no linkage between maternal BMI and shoulder dystocia[18].

Moreover, conflicting results are also documented on the relationship or linkage of shoulder dystocia with maternal obesity but detection of the relationship through statistical technique is missing in some studies. Generally, maternal obesity likely to be associated with increase in the risk of shoulder dystocia but not affect independently as offspring birth weight is noticed.

CONCLUSIONS

The observation made in our study concluded that shoulder dystocia is not a frequently encountering situation but not so Rare. Its outcome is much drastic if unanticipated and not managed according to guidelines. So, the information regarding shoulder dystocia and the risk factors associated with it in the local population in our region might helpful for the obstetric care providers for consultation to the patients and to prepare the guidelines to decrease the risk of shoulder dystocia.

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