

Objective

Results

Conclusions

To determine the impact chorioamnionitis has on the risk of 3rd and 4th degree perineal lacerations (3/4PL)

Background

- Perineal lacerations are a common complication of vaginal birth, occurring in approximately 85% of patients [1]
- Due to increasing cesarean section rates, decreasing rates of routine episiotomies, and limited use of forceps-assisted vaginal deliveries, there is an overall declining rate of 3/4PL [2]
- Recent prevalence of 3-5% [3]
- However, they remain a significant cause of physical and emotional distress

Materials and Methods

- Retrospective population-based cohort analysis based on the CDC Natality Live Birth online database, 2016-2020 [4]
- All US term, singleton, nonoperative vaginal births eligible for analysis
- Study group: all deliveries complicated by 3/4PL; controls: all deliveries without 3/4PL (Table 1). Compared intrapartum characteristics
- Intrapartum characteristics: fetal birth weight, parity, use of neuraxial anesthesia, and **presence of chorioamnionitis** (Table 2)
- Rates of 3/4PL were compared between baseline characteristics by using Pearson's Chi-squared test with statistical significance set at $p < 0.05$
- Bonferroni correction was used to account for multiple comparisons
- Multivariable logistic regression was performed

Table 1: Baseline characteristics compared between the study groups

	With 3/4PL - N (%)	Without 3/4PL - N (%)	Total	p value
Fetal/Intrapartum Characteristics				
Chorioamnionitis				
With	6,620 (4.0)	160,650 (96.0)	167,270	< 0.05
Without	132,545 (1.1)	11,365,073 (98.9)	11,497,618	
Epidural Anesthesia				
With	111,205 (1.3)	8,299,583 (98.7)	8,410,788	< 0.05
Without	27,960 (0.9)	3,226,140 (99.1)	3,254,100	
Parity				
0	104,495 (2.3)	4,452,938 (97.7)	4,557,433	< 0.05
1	25,735 (0.7)	3,643,062 (99.3)	3,668,797	
≥ 2	8,595 (0.3)	3,403,478 (99.7)	3,412,073	
Birth Weight (grams)				
< 2500	1,331 (0.4)	298,773 (99.6)	300,104	< 0.05
2500 - 3499	68,227 (1.0)	7,037,824 (99.0)	7,106,051	
3500-3999	50,551 (1.5)	3,344,015 (98.5)	3,394,566	
≥ 4000	19,034 (2.2)	843,085 (97.8)	862,119	

Table 2: Adjusted odds ratios for 3/4PL by risk factor

	Adjusted Odds Ratio (aOR)	95% Confidence Interval (CI)
Fetal/Intrapartum Characteristics		
Chorioamnionitis		
With	1.86	1.81 - 1.91
Without	1.00	-
Epidural Anesthesia		
With	1.10	1.08 - 1.11
Without	1.00	-
Parity		
0	9.89	9.65 - 10.13
1	2.64	2.58 - 2.71
2+	1.00	-
Birth Weight (grams)		
< 2500	1.00	-
2500 - 3499	2.31	2.18 - 2.44
3500-3999	4.13	3.90 - 4.37
> 4000	7.42	7.00 - 7.87

- Of the 11,677,671 who met inclusion criteria, 139,174 (1.2%) experienced 3/4PL
- Intrapartum chorioamnionitis was associated with a 4.0% rate of 3/4PL compared to a 1.1% rate in women without (aOR of 1.86, 95% CI 1.81-1.91)**
 - Birth weight was directly proportionate - 2.2% of neonates with birthweight of 4,000g+ affected compared to 0.4% of neonates with birth weight less than 2500g (aOR 7.42, CI 7.00-7.87 and aOR 1.0)
 - Increased parity was protective, with nulliparas with the highest prevalence - 3/4PL rate of 2.3% compared to 0.3% seen in multigravidas with 2+ (aOR 9.89, CI 9.65-10.13 and aOR 1.0)
 - Neuraxial anesthesia - slightly increased rate (1.3%, aOR 1.10, CI 1.08-1.11 compared to 0.9%, aOR 1.0 in those without neuraxial anesthesia)

- Based on this current US database, we identified chorioamnionitis as a major risk factor for 3/4PL
- The potential explanation may be due to dysfunctional labor, increased perineal edema secondary to protracted labor, or increased friability of tissue
- Chorioamnionitis has not previously been studied as a potential risk factor for 3/4PL in non-operative vaginal births
- As expected, nulliparity and increased birth weight were associated with the highest risk
- Understanding this association may assist in better counseling and potentially reduce the rates of 3/4PL in gravidas with chorioamnionitis

References

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