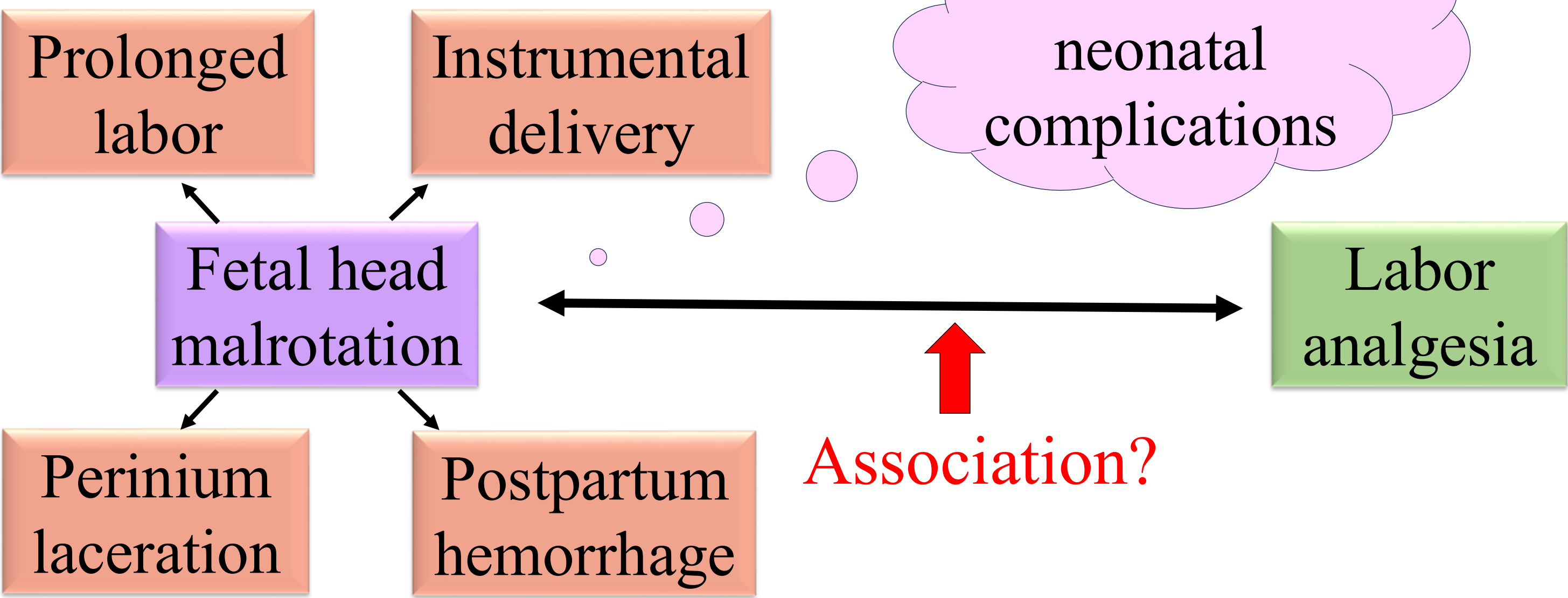


The association between fetal head malrotation and labor analgesia: a propensity score-matched analysis

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Introduction

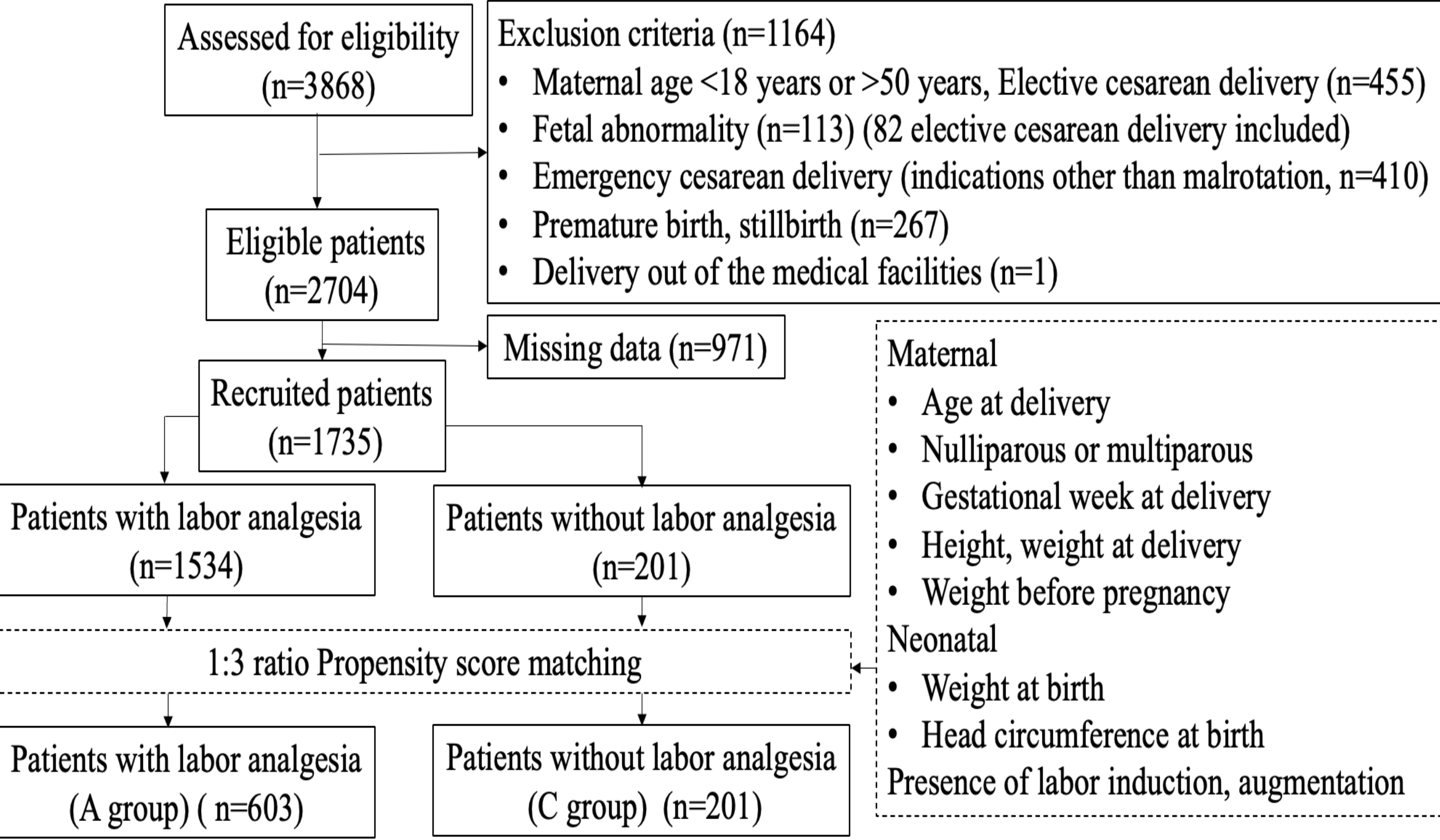


Aim:To clarify the association between labor analgesia and malrotation by matching maternal characteristics and delivery intervention.

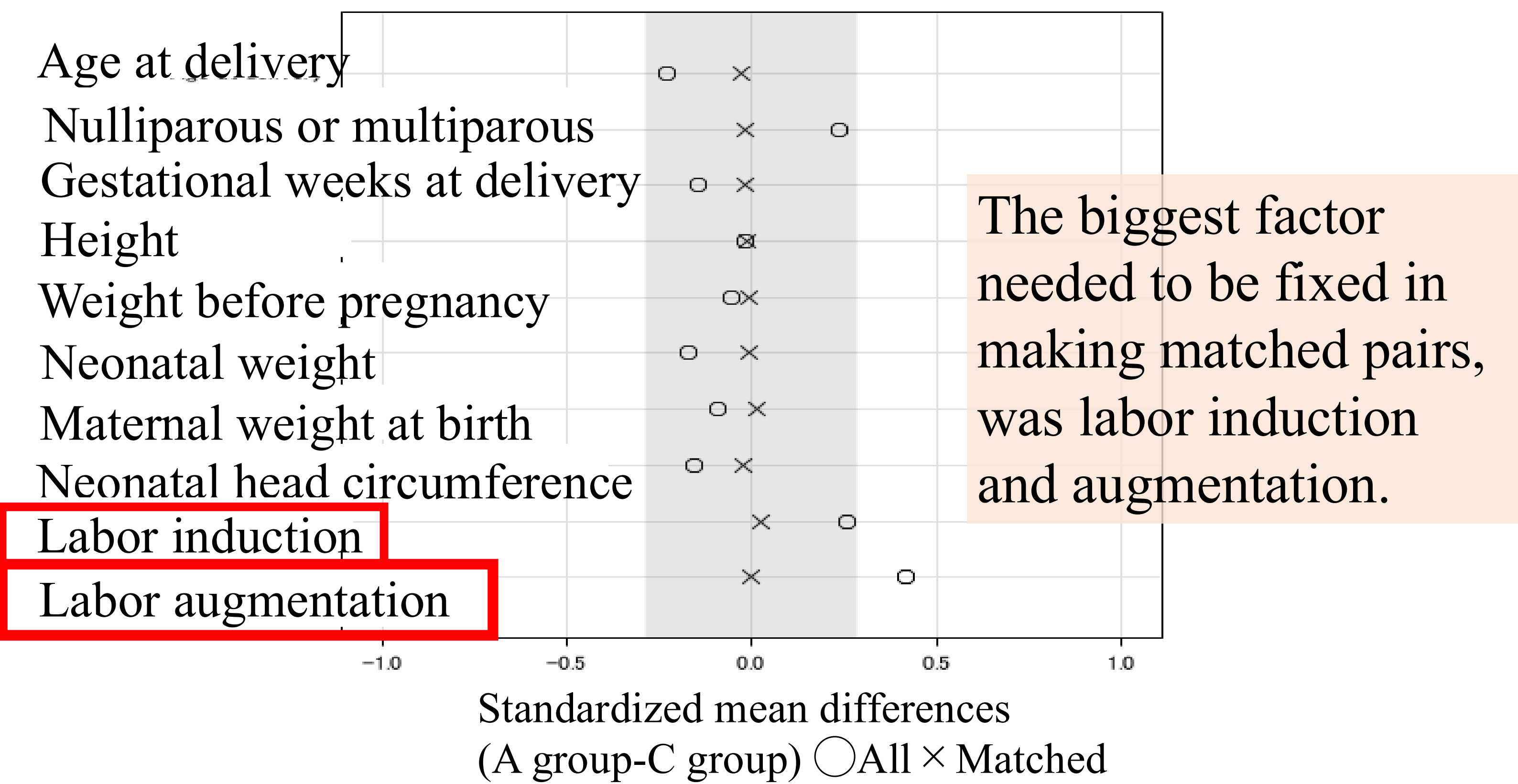
Methods

- Object:** Full-term pregnancy with singleton cephalic fetus whose cervix was fully dilated during January 2020 to 2023
- Primary outcome:** occurrence of malrotation
- Secondary outcome:** mode of delivery, success rate of attempted manual rotation

Result 1: Consort diagram



Result 2: Standardized Mean Differences



Result 3: Outcomes after matching

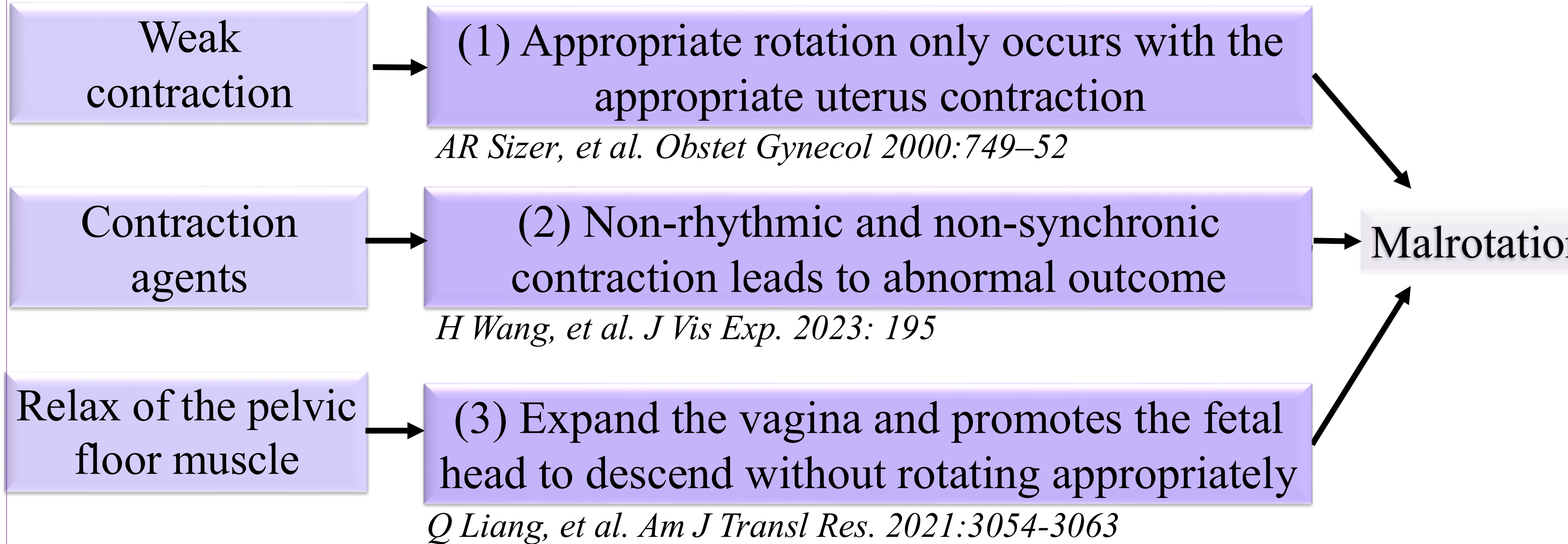
		Labor analgesia (A group)	No labor analgesia (C group)	P value
		(n=603)	(n=201)	
Fetal head malposition		70 (11.6%)	13 (6.5%)	0.03
Manual rotation	Success	38/59 (64.4%)	8/11 (72.7%)	0.75
	Failure	18/59 (30.5%)	3/11 (27.2%)	
	Total	56/70 (80.0%)	11/13 (84.6%)	
Cesarean delivery		1 (0.1%)	0 (0.0%)	0.51
Vaginal delivery		602 (99.9%)	201 (100%)	0.51
Normal vaginal delivery		447 (74.1%)	171 (85.0%)	0.001
Instrumental delivery	Naegele forceps	135/155 (87.1%)	28/30 (93.3%)	0.63
	Kielland forceps	8/155 (5.2%)	1/30 (3.3%)	
	Vacuum	12/155 (7.7%)	1/30 (3.3%)	0.38
	Total	155 (25.7%)	30 (14.9%)	0.001

Fetal head malposition and instrumental delivery was significantly higher in the A group but no difference in cesarean delivery.

Manual rotation was attempted in more than 80% but no difference in the success rate between A and C group.

Discussion

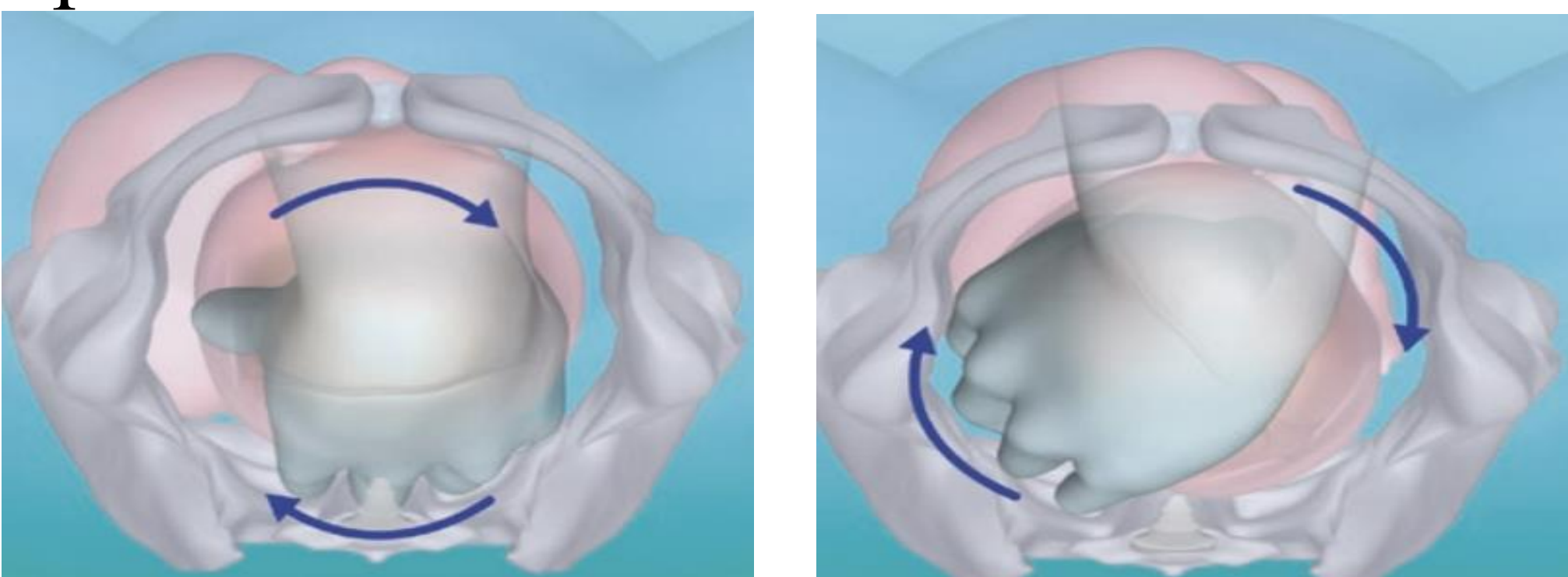
Findings 1: Labor analgesia is associated with the occurrence of malrotation even after balancing baseline variables by propensity score matching.



Findings 2: Labor analgesia did not increase the rate of cesarean.

① Manual rotation

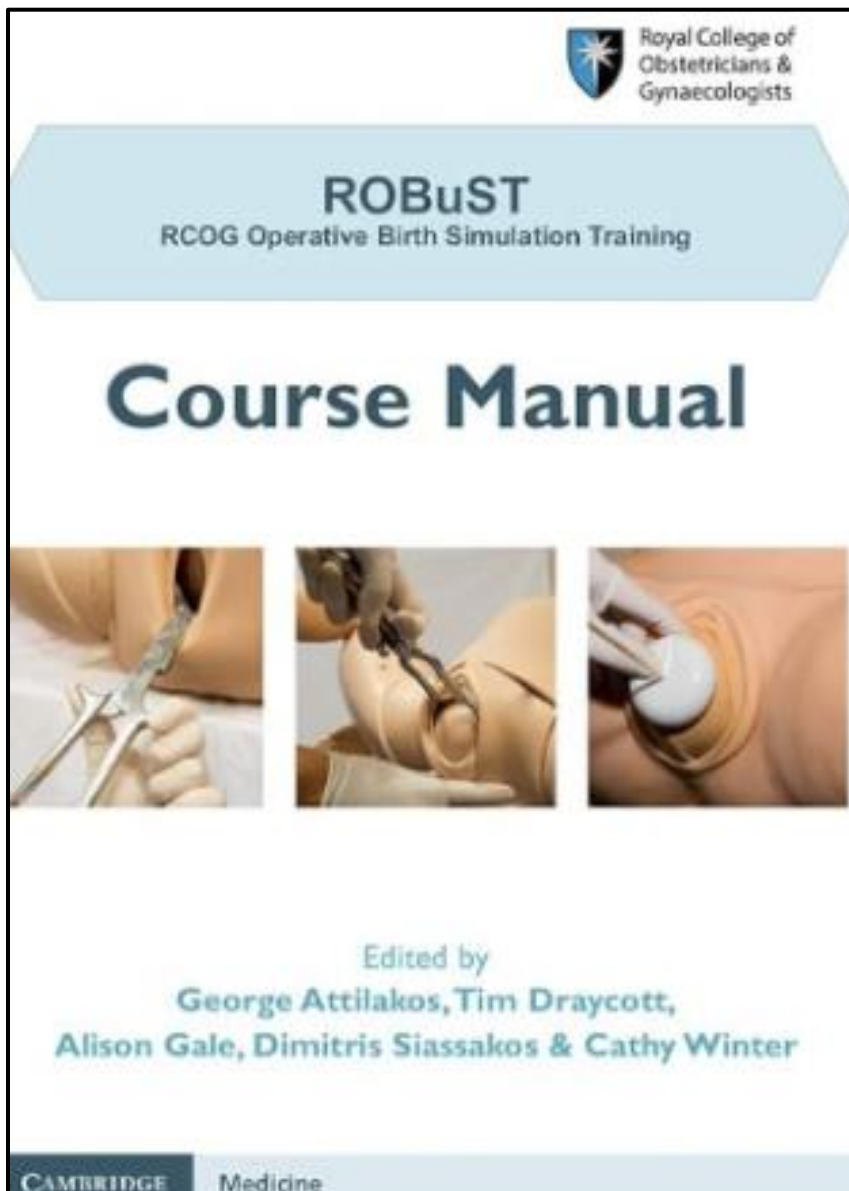
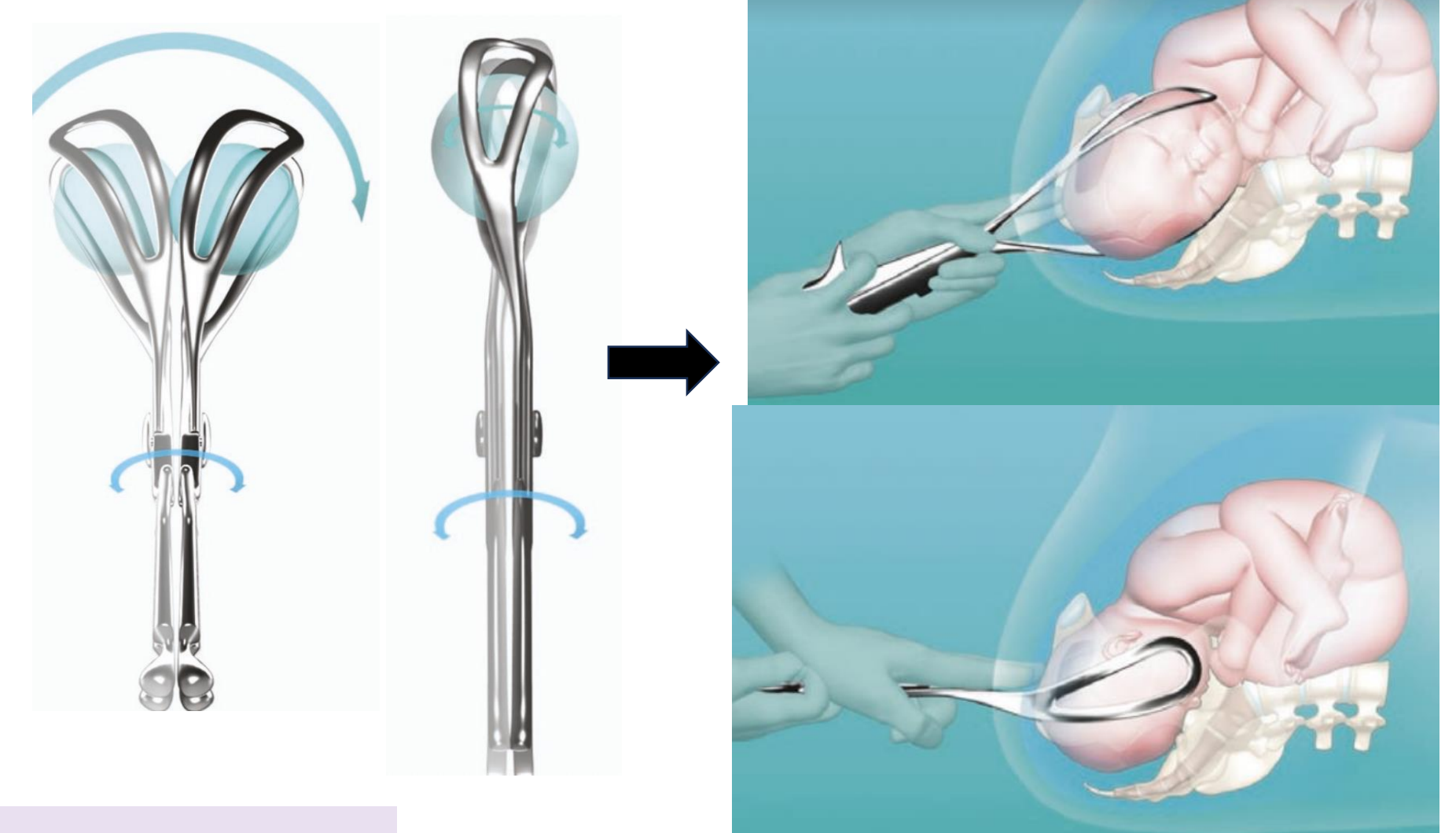
(attempted in 85% cases with a success rate of 63%)



S. Takeda (2018) New assessment of fetal descent and forceps delivery. Springer

② Kielland rotational forceps delivery

(conducted in 39 cases)



Acquiring these two skills might be important in handling labor analgesia.

Conclusion

This study proved the association between fetal head malposition and labor analgesia, without increasing cesarean rate with the countermeasures.