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50 Years Ago in *THE JOURNAL OF PEDIATRICS*

More Than 50 Years of the "Thoracic Squeeze"

Adams FH, Yanagisawa M, Kuzela D, Martinek H. The Disappearance of Fetal Lung Fluid Following Birth. J Pediatr 1971;78:837-43.

In utero, lung development is facilitated through the secretion of lung fluid and fetal breathing movements that move fluid in and out of the airways. This fetal lung fluid must be cleared rapidly at the time of birth to enable gas exchange with the first breaths. Understanding how this amazing process occurs so quickly has been of longstanding interest to pediatricians. Fifty years ago in *The Journal of Pediatrics*, Adams et al reported clearance of lung fluid in fetal and neonatal rabbits delivered vaginally and by cesarean. They found that the lungs of some rabbits born by cesarean were not fully aerated until after 6 hours of breathing, whereas those who delivered vaginally seemed to be completely aerated after 10 minutes. Adams et al speculated that these immediate differences in lung fluid may have been at least partially due to the compression of the thorax that had recently been demonstrated during vaginal birth.

Similar to newborn rabbits, human infants delivered by cesarean have higher rates of retained fetal lung fluid and higher rates of transient tachypnea of the newborn. During the 50 years since the publication of this study, the lack of a "thoracic squeeze" during cesarean deliveries has been an intuitive explanation to many parents of infants with transient tachypnea. However, additional research has shown that the process is more complex and begins during late gestation with changes in the epithelial sodium channels.[1] Although transient tachypnea is generally regarded as a benign condition, more research is needed on this illness because it is a common reason for neonatal intensive care unit admission. Finding ways to decrease the incidence or severity of transient tachypnea would give more infants a healthy start and decrease the separation of families at this important time of life.

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