Suctioning neonates at birth: Time to change our approach

There's a better way to clear secretions from a neonate's mouth and nose, and it's less likely to cause adverse effects.

Iliana Neumann, MD; Anne Mounsey, MD; Niladri Das, MD
Department of Family Medicine, University of North Carolina at Chapel Hill (Drs. Neumann and Mounsey); Family Medicine Residency Program, University of Pittsburgh St. Margaret, Pa (Dr. Das)

PURLs EDITOR
James J. Stevermer, MD, MSPH
Department of Family and Community Medicine, University of Missouri-Columbia

PRACTICE CHANGER

Stop suctioning neonates at birth. There is no benefit to this practice, and it can cause bradycardia and apnea. Instead, wipe the baby's mouth and nose with a towel to clear excess secretions and stimulate respiration.[1]

STRENGTH OF RECOMMENDATION

B: Based on a single randomized equivalency trial.

Kelleher J, Bhat, R, Salas AA, et al. Oronasopharyngeal suction versus wiping of the mouth and nose at birth: a randomised equivalency trial. *Lancet*. 2013;382:326-330.

ILLUSTRATIVE CASE

A healthy neonate is born through clear amniotic fluid with no meconium. She is vigorous and has no major congenital anomalies. Does she need oronasopharyngeal suctioning?

No, she does not need suctioning. Although it is still standard practice to perform oronasopharyngeal suctioning with a bulb syringe immediately after delivery, multiple studies have found no benefit to routine suctioning.[2-7] Guidelines from the Neonatal Resuscitation Program (NRP) and other organizations recommend against the practice, even for neonates born through meconium-stained amniotic fluid.[8,9] Suctioning is done because some clinicians believe it reduces the risk of aspiration, especially if there is meconium, and to stimulate breathing, but the evidence suggests that suctioning can stimulate the vagus nerve, which can lead to bradycardia.[2] Studies that compared babies who did and didn't receive suctioning found that those who received it had lower Apgar scores and oxygen saturation levels.[2-4]

Wiping the neonate's mouth and nose with a towel is an alternative to suctioning, but until now no trials have compared the outcomes of these 2 methods. Kelleher et al[1] conducted an equivalency trial to determine if wiping the mouth and nose is as effective as oronasopharyngeal suctioning.

STUDY SUMMARY

No difference in breathing after wiping or suctioning

Kelleher et al[1] studied neonates born after at least 35 weeks gestation, excluding those who had major congenital anomalies or were non-vigorous (depressed muscle tone or respiration, heart rate <100 beats/min, or both) and born into meconium-stained amniotic fluid, as well as those whom they anticipated would need advanced resuscitation. Neonates were randomly assigned to receive either oronasopharyngeal suctioning with a bulb syringe or wiping of the face and mouth with a towel, starting immediately after the umbilical cord was cut and lasting as long as needed while in the delivery room. The primary outcome was the mean respiratory rate in the first 24 hours after birth. The predefined range of clinical equivalence between the 2 groups was a respiratory rate within 4 breaths/min.

CONTINUED

There was no difference in respiratory rates between the suctioning and wiping groups within the first 24 hours of birth.

Of 506 neonates randomized, 15 were excluded because they were not vigorous and had meconium-stained fluid, and 3 were excluded when their parents withdrew consent. Baseline characteristics for the 2 groups—including maternal age, presence of chronic medical conditions, and body mass index; vaginal vs cesarean delivery; umbilical artery pH; and neonatal sex, ethnic origin, and birth weight—were similar.

In the first 24 hours after birth, the average respiratory rate in the wiping group was 51 breaths/min (standard deviation [SD] ± 8) vs 50 breaths/min (SD ± 6) in the suctioning group. There was no difference in respiratory rates between the 2 groups at 1, 8, or 16 hours after birth. There was also no difference between the 2 groups in Apgar scores or need for advanced resuscitation. More neonates in the wiping group than in the suctioning group were admitted to the neonatal intensive care unit (45 of 246 [18%] vs 30 of 242 [12%]; *P*=.07), but the study was not powered to assess this outcome.

WHAT'S NEW

Wiping is as effective as suctioning, but there are no adverse effects

This study gives us evidence that wiping the face, mouth, and nose is equivalent to suctioning newborns at delivery, and it supports the NRP recommendation against routine suctioning in vigorous neonates born at term. Wiping avoids the potential adverse effects on the respiratory mucosa, bradycardia, and lower Apgar scores associated with suctioning via bulb syringes.

CAVEATS

Wiping is not best if a neonate's airway is obstructed

This study looked only at neonates born after 35 weeks' gestation who did not have meconium-stained amniotic fluid or congenital abnormalities. Also, NRP guidelines do recommend clearing the airways with a bulb syringe or suction catheter if airway obstruction is evident or positive-pressure ventilation is required.[8]

Another caveat … In this study,[1] there were 98 treatment crossovers: 64 of the 246 neonates in the wiping group received suctioning, and 34 of the 242 neonates in the suctioning group received wiping. However, this was not likely to change the study's overall conclusion because a per-treatment analysis also found that wiping and suctioning were equivalent.

CHALLENGES TO IMPLEMENTATION

"We've always done it this way"

Practice patterns in a delivery room can be difficult to change. As we work on improving our delivery room environment and changing ingrained habits, the evidence from this study should help support the use of wiping in place of suctioning. The transition from suctioning to wiping also would be facilitated by having easily accessible towels designated for wiping. JFP

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