Overview on Feeding an Infant with a Cleft Palate

Transcript

Hello, my name is Camryn Heister, speech-language pathologist from Lancaster, Pennsylvania. I'm presenting the poster titled "Overview on Feeding an Infant with a Cleft Palate" on behalf of ASHA's Special Interest Group Number 5: Craniofacial and Velopharyngeal Disorders. In this presentation, I'll summarize current evidence and expert consensus on current feeding guidelines for infants with cleft palate with or without cleft lip. I'll also share strategies to support safe, efficient feeding and optimal growth and development in this population.

Feeding can be impacted by a cleft palate in several ways. Infants born with a cleft lip alone typically feed without major difficulty. They can usually breastfeed or use a typical bottle. However, if there is a cleft of the palate, feeding becomes more challenging due to the separation between the oral and nasal cavities. During typical suckling, infants press their tongues against the hard palate to create positive pressure for compression of the nipple and negative pressure to draw fluid from the nipple. Without that separation of the oral and nasal cavities, it's difficult for an infant to generate the negative pressure needed to draw milk from the nipple. The severity of feeding difficulties often depends on how wide or extensive the cleft is. In infants with an isolated cleft palate with or without cleft lip, the pharyngeal phase of the swallow is typically intact and timely.

It's imperative that infants born with a cleft palate are referred to a multidisciplinary cleft palate or craniofacial team as early as possible. A team approach ensures the infant's growth, nutrition, and feeding skills are closely monitored. Team members may include a speech-language pathologist or feeding specialist, who will work closely with families to demonstrate appropriate bottles and techniques, perform feeding assessments, and help determine the most effective feeding system for each baby. A feeding specialist may also provide guidance to mothers who are pumping to encourage sufficient provision of expressed breast milk. Another important team member includes the plastic surgeon, who will manage surgical repair of the cleft lip and palate. Dietitians can monitor growth and make recommendations for caloric intake. Dentists and orthodontists will work together to provide nasoalveolar molding, or NAM, for infants to prepare for lip repair. Lastly, a pediatrician may oversee overall health, developmental milestones, and weight gain.

Infants with cleft palate may experience a range of feeding challenges such as: regurgitation, excessive air intake, difficulty with sealing the nipple or drawing the nipple to the mouth, difficulty achieving negative pressure needed for suction, increased feeding time, decreased feeding efficiency, inadequate volume of oral intake, and poor weight gain due to excessive energy expenditure.

Once these feeding challenges are identified, the next step is to determine the most appropriate feeding modality for the infant. This decision is guided by first performing an oral-peripheral examination, which helps confirm the type and extent of the cleft.

If an infant has a cleft lip only, they can typically breastfeed or use a regular bottle. When both the lip and the alveolus is involved, the clinician should evaluate whether the baby can generate

suction. If suction is adequate, breastfeeding or a regular bottle may still work; if not, a cleft-adapted bottle is recommended until the lip is repaired. For infants with a cleft palate, with or without a cleft lip and/or alveolus, a cleft-adapted bottle is almost always necessary until they undergo palate repair. During feeding, we want to see a coordinated suck-swallow-breathe sequence, usually one to two sucks per swallow, without coughing, choking, or gulping. If feedings consistently last longer than 30 minutes, it may help to trial a faster flow rate. Conversely, if the infant is coughing or choking, a slower flow rate may be needed. In addition to selecting the right bottle and flow rate, positioning can play an important role in feeding success. Infants should be fed in a semi-upright, upright, or side-lying position, which can help with bolus transfer, reduces nasal regurgitation, support pacing and airway protection, and promote more efficient breathing during feeding. Once a feeding modality is selected and an infant is using the right bottle with the right flow rate and taking an adequate volume, but not gaining weight, the infant may need to see their pediatrician or dietitian to discuss other options.

There are several adaptive bottle systems available for infants with cleft palate who cannot create suction. Each bottle is designed to help the infant draw milk through compression rather than suction. The Dr. Brown's Zero Resistance specialty feeding system includes a blue one-way valve that's inserted into the nipple. The valve allows for the forward flow of milk and prevents backflow, resulting in a nipple that expels liquid when the baby compresses on the nipple. Flow rate can be adjusted by choosing different nipple levels, ranging from an ultra-preemie to a Y-cut. The Medela Special Needs Feeder also uses a one-way valve and a soft silicone nipple. The nipple is compressed by the feeder or independently by the infant through spontaneous tongue and jaw movements. The flow rate is adjusted by rotating the nipple to one of three lines facing up towards the infant's nose. The shortest line is the slowest and the longest line is the fastest flow. The pigeon baby cleft palate bottle features a Y-cut nipple and a one-way valve that allows the infant to independently expel the liquid through reflexive tongue and jaw movements. There are two nipple sizes available to manage flow rate including preemie or regular.

After selecting the right feeding system, additional compensatory strategies can further support safe and effective feeding. Adjusting the flow rate of the nipple helps ensure that milk flows easily without overwhelming the infant's coordination of suck-swallow-breathe. Pacing strategies, such as pausing after several sucks, supports the infant with coordination of respiration and swallowing. Providing gentle lip, cheek, or jaw support can help the infant maintain a better labial seal and promote jaw stability. Because these infants may take more air in during swallowing due to their cleft palate, frequent burping is also recommended. In addition to these techniques, nutrition support and counselling are crucial. Some infants may need to increase their feeding volume or number of feedings, while others may benefit from increasing caloric density of expressed breast milk or formula. It may be recommended that families track feeding volumes in a log to monitor volume intake and progress. Ideally, feedings should not exceed 30 minutes, and infants should return to their birthweight within about 2 weeks. It's worth noting that literature reports that infants with cleft palate only may take closer to 22 days to reach their birthweight.

Feeding routines may evolve as the infant undergoes surgical repairs within the first year of life. Lip repair typically occurs between 3 and 6 months of age, and many craniofacial teams allow infants

to resume feeding with their specialty bottles after surgery. Parents may notice that feeding becomes easier due to improved labial seal. Infants with an isolated cleft palate, with or without cleft lip, usually have normal oral motor development and can begin solids around 4 to 6 months of age, just like typically developing peers. Some nasal regurgitation with solids is normal before palate repair and is not a reason to delay introducing them. Palate repair is usually completed between 9 and 14 months. Post-operative feeding guidelines vary by center, but there's typically a short period when bottles, straws, or cups requiring suction are limited while the palate heals. As long as there are no other anatomical or physiological difficulties following the cleft palate repair, the infant can generally transition to regular feeding routines.

Even with optimal management, some infants may continue to show signs of feeding difficult or have trouble gaining weight. Further evaluation of swallowing function is warranted if an infant is unable to establish a coordinated suck-swallow-breathe pattern despite compensatory strategies, or if you observe arching of the back, refusal of the nipple, coughing, choking, or gagging during feeds. Other red flags to be aware of include an increased respiratory rate or oxygen desaturation during feeding. These symptoms suggest the need for a comprehensive feeding and swallowing evaluation.

In conclusion, infants born with a cleft palate benefit most from early identification, team-based care, and individualized feeding management. Through collaboration among specialists and families, and by using appropriate feeding systems, positioning, and nutrition support, these infants can achieve safe, efficient feeding and healthy growth.

On behalf of ASHA's Special Interest Group 5: Craniofacial and Velopharyngeal Disorders, thank you for taking the time to listen to this presentation. We hope this overview provided helpful insight into the current feeding recommendations and strategies for supporting infants with cleft palate.