

Foals Without Suckle-Swallow Reflex Need Nutritional Support (AAEP 2012)

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A foal's suckle-swallow reflex is vital to life, allowing him to access the colostrum, and later milk, he needs to thrive. But sometimes this reflex doesn't function properly for a variety of reasons. These foals, called dysphagic, require immediate and specialized care to ensure they begin life without a nutritional deficit.

At the 2012 American Association of Equine Practitioners convention, held Dec. 1-5 in Anaheim, Calif., Virginia Buechner-Maxwell, DVM, MS, Dipl. ACVIM, a professor at the Virginia-Maryland Regional College of Veterinary Medicine, in Blacksburg, Va., described ways to provide nutritional support for dysphagic foals.

Dysphagia Basics

Dysphagia is a common problem in sick neonatal foals, Buechner-Maxwell said, and it can be caused by a variety of issues, including:

- General weakness;
- Muscle disorders;
- Central nervous system problems;
- Neuromuscular disease;
- Anatomic abnormalities; and
- Trauma or injury.

Common clinical signs of dysphagia include:

- The presence of milk in one or both nostrils;
- Coughing during or immediately after nursing;
- Dribbling milk from the mouth; and
- Auscultable (audible using a stethoscope) fluid in the foal's larynx or trachea during or after nursing.

Managing Dysphagic Foals

Buechner-Maxwell described the recommended steps for managing foals with dysphagia:

Stabilize the Foal--Foals are born with minimal energy reserves, so their inability to swallow milk can easily lead to potentially serious health conditions including hypoglycemia, dehydration, and shock. If a foal exhibits signs that he cannot suckle, first find a safe way to provide him with nutrition, Buechner-Maxwell said. "In foals that are otherwise relatively healthy, a veterinarian can place a feeding tube in the foal's nose and down into the stomach so that milk can be delivered to the foal (enterally, via the gastrointestinal tract) without the risk of the foal inhaling milk into its lungs," she explained.

If the foal is very sick and weak, he might require parenteral (intravenous) fluids and nutrition before he can receive food enterally. In these cases, stabilizing the foal via parenteral nutrition is the first priority. In the field, Buechner-Maxwell recommended providing isotonic crystalloid fluids with 2.5% dextrose added to help stabilize an ailing dysphagic foal.

Although foals often need this parenteral nutrition in the early stages of treatment, enteral nutrition provides a more balanced diet and is a less expensive and safer way to feed sick foals. Thus, at this time, Buechner-Maxwell said to evaluate a foal's gut motility and health status to determine if he is a candidate for eventual enteral nutrition.

Assess the Suckle-Swallow-Breath Reflex--Next, Buechner-Maxwell said the veterinarian should assess the foal's suckle-swallow-breath reflex, which will help establish how extensively the foal's nursing ability is compromised. He or she can look back at this evaluation and compare it to future observations to monitor progress.

Veterinarians haven't established specific guidelines for evaluating this reflex in horses. However, by modifying guidelines for assessing the reflex in humans, Buechner-Maxwell described steps practitioners can take to evaluate foals' suckle-swallow-breath reflex. Recommendations range from observing a nursing attempt and testing for a strong suckle with a finger to using endoscopy to visualize the foal's airway and palpating anatomic structures, she said. The ultimate goal is to determine if the foal can't suckle and swallow without aspirating milk into his trachea.

Place the Feeding Tube--If the veterinarian determines the foal is a candidate for enteral nutrition, he or she will then place an indwelling feeding tube through the nostril into the esophagus to deliver the mare's milk or milk replacer to the stomach. Buechner-Maxwell reviewed the steps for selecting, placing, and securing the tube for the audience and she noted that small, soft tubes are most effective for feeding young horses.

Preparing Milk or Milk Replacer--Although preparing milk or milk replacer might sound like a simple task, there are some important considerations to make. One of the most important is to ensure the liquid is prepared in a clean environment.

"Although food entering the gut is not sterile, it is important to maintain cleanliness and not overburden the neonatal gut with a high dose of bacteria," Buechner-Maxwell explained. "To avoid this, the area in which the foal's diet is prepared should be 'kitchen' clean."

If the foal's dam is available, she should be milked every two to four hours. The milk should be strained through several layers of gauze to remove large particles before the liquid is refrigerated. She recommended labeling milk containers with the day and time it was collected, as milk older than one day should be discarded. Before feeding mare's milk to the foal, warm it slowly, and discard any left over after feeding. "When the milk is warm enough that it is comfortable when dripped on human skin, it can then be fed," she noted. "Do not feed milk that has been scalded or boil milk when reheating."

When using milk replacer, Buechner-Maxwell recommended preparing enough formula for three to four feedings with warm water. The caretaker should feed the amount of milk required for one feeding and store the remainder in a refrigerator until it is needed. Again, she said to mark the container with a date and time. Heat the replacer slowly, as well, and only reheat stored milk once, discarding any remaining after feeding.

Buechner-Maxwell also stressed that all instruments used to prepare the milk or replacer or administer it to the foal should be cleaned thoroughly between uses. It's also important to ensure the milk it hasn't spoiled before feeding it to the foal.

"Foals being fed through a feeding tube cannot reject milk or replacer that has soured, so it is important for the caregiver to be vigilant in identifying and discarding spoiled food," she said.

Managing and Feeding with a Feeding Tube--Before providing nutrition via the feeding tube, it's vital to ensure that it's in the proper location to deposit milk or replacer into the stomach. Buechner-Maxwell reviewed how veterinarians can determine this, but she cautioned that it's best to remove and reinsert the tube if there's any doubt about its placement.

Veterinarians often use feeding bags when providing enteral nutrition, which can be washed between each use. She said the bags can help prevent overfilling of the stomach because the milk or replacer is delivered by gravity, rather than force.

Each foal requires an individually developed diet, and Buechner-Maxwell reviewed some guidelines with attendees. Eventually, the neonate should receive 20% to 25% of his body weight in milk daily. Veterinarians should make recommendations on feeding frequency and amount to satisfy the dietary needs of each individual foal.

Feeding Tube Complications

Buechner-Maxwell briefly touched on complications that could arise from enteral nutrition, including feeding tube misplacement.

"The cause is rarely due to spontaneous tube failure and is more frequently associated with efforts on the foal's part to remove the tube," she said.

As with initial placement, if veterinarians suspect the tube is out of place, they should remove and reinsert it before feeding, she said.

Other complications to watch for when managing a foal with a feeding tube include inflammation of or trauma to the larynx and pharynx, milk aspiration, overfeeding, hyperglycemia, bloating, colic, diarrhea, and constipation.

Transitioning to Suckling

"Foals that are born with a strong suckle, but lose that suckle as they become ill, tend to recover the ability as their disease resolves," Buechner-Maxwell explained. "However, premature foals that require a ... feeding tube from birth can require several weeks or longer to establish an effective suckle."

Foals should be allowed to suckle their dams, if possible. Otherwise, she said to train them to suckle a bottle or drink from a bucket.

Researchers studying human neonates have shown that pacifiers and other similar tactics can promote a suckle-swallow response.

"Further studies are required to determine if these types of exercises could benefit the dysphagic foal," she said.

Disclaimer: Seek the advice of a qualified veterinarian before proceeding with any diagnosis, treatment, or therapy.