Pharyngeal Lacerations and Retropharyngeal Abscesses in Cattle.

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Injuries of the oro-pharynx are most often associated with trauma due to balling guns, Frick speculums, drench syringes or the boluses themselves.[1] Often the operator has no idea that an injury has occurred until several days later when the cow's inappetance/throat swelling has become apparent. Although many lacerations are small and heal spontaneously with minimal clinical signs, identifiable pharyngeal lacerations cause much distress to affected cattle resulting in significant weight loss and/or death. The following is a summary of 17 cases of pharyngeal laceration-/retropharyngeal abscess seen at the Ohio State University Veterinary Teaching Hospital (table 1). Clinical signs seen in cattle found to have pharyngeal lacerations included dyspnea (11), excessive salivation (7), high cervical swelling (7), anorexia (7), bloat (1) and malodorous breath (1). The respiratory signs in these animals were primarily upper respiratory in nature although pneumonia was also detected in several animals. The degree of respiratory embarrassment in 2 cattle was severe enough to warrant tracheostomy.

Table 1.

Summary of 17 Cases of Pharyngeal Laceration

	ETIOLOGY	DURATION	TREATMENT	HOSPITALIZED
1	bolus	7 days	abx, st	21 days
2	balling gun	3 days	abx, st, t	42 days
3	bolus	2 days	abx, t	3 days
4	bolus	4 days	abx, su	15 days
5	bolus	3 days	abx, st	22 days
6	bolus	10 days	abx, rf	36 days
7	bolus	2 days	abx, su	5 days
8	unknown	2 days	abx, rf	20 days
9	dose syringe	5 days	abx, su, t	13 days
10	unknown	6-30 days	abx, su	15 days
11	bolus	3 days	abx, st	21 days
12	balling gun	14 days	abx, su, t	25 days
13	esoph feeder	3 days	abx, su, t*	42 days
14	unknown	3 days	abx, st	12 hours
15	bolus	2 days	abx, antih	3 days
16	bolus	7 days	abx, rf	12 days
17	magnet	21 days	abx, rf	14 days

abx = antibiotics
st = steroids
su = surgery
t = nasogastric tube
rf = rumen fistula
antih = antihistamines
* calf initially had nasogastric tube and later a gastrostomy tube

Visual assessement of the oropharynx is important in prognosing animals with pharyngeal lacerations. Endoscopy has the distinct advantage over the flashlight-speculum method by allowing the veterinarian to determine not only the width of the injury but also its depth. In 16 of the cases presented here, a hand palpation of the pharyngeal area was performed before endoscopy was done. In 10 of the 17 cases, boluses or magnets were found and removed by digital examination.

The size of the laceration did not always correlate well with the outcome, although as a rule cattle with large openings did worse than cattle with smaller lesions. Interestingly, the development of retropharyngeal abscesses was greater in cattle with openings 1 inch than in larger lacerations. It is thought that the smaller laceration openings may have interfered with drainage of the area.

One of the most significant and grave prognostic signs was the presence of swelling extending ventrally and posteriorly down the neck. These swellings were evident immediately behind the mandibles and gave the affected cattle's neck a full appearance. This was associated with the development of dissecting tracts along the fascial planes of the cervical muscles. It was often difficult to accurately assess the degree of adjacent soft tissue involvement for several days following the institution of treatment. For this reason, repeated endoscopic examinations are advantageous in determining how well the cow is walling the infection off. Radiographs of the throat and neck area are also useful if endoscopy is not available. Infected tracts will usually show up due to air or gas accumulation along the muscle planes. Radiograph machines with high capacity are needed for good resolution.

Treatment of pharyngeal lacerations causing clinical signs can be both tedious and costly. In cattle with dysphagia, emaciation and dehydration can progress rapidly. Measures should be taken as early as possible to remedy these situations. Suturing a nasogastric tube in the external nares will enable the owner/veterinarian to pump fluids to maintain hydration without causing excessive trauma. Another method of accomplishing the same thing, and the one preferred by the OSU staff, is to make a rumen fistula. The advantages of a rumen fistula over a nasogastric tube include: allowing supplimentation of feeds in addition to

fluids, preventing gaseous bloat in cattle having eructation problems, and allowing for easier fluid administration (takes less restraint). The major disadvantages are related to making the fistula and spillage of rumen contents over the cow's side.

In making a rumen fistula, only the 2″ diameter circle of skin is actually removed. The muscular layers and peritoneum can be blunt dissection (grid incision). A towel clamp/Vulsellum forceps can be used to grasp the rumen and pull it above the level of the skin (1-2″). A modified right angle Cushing suture or horizontal mattress pattern using non-absorbable suture is performed, tacking the rumen wall directly to the skin. Particular attention should be paid to the most ventral portion of the fistula to make sure the seal is tight enough to prevent leakage into the abdomen. If at all possible, the rumen cap should not be opened for 24 hours to allow formation of a fibrinous seal. Once the rumen is opened, anyone administering fluids through the fistula must be careful not to tear the rumen wall away from the skin edge.

In cattle with larger pharyngeal lacerations, all hay and grain should be withheld once the retropharyngeal pocket has been cleared so the space is not immediately refilled. The fact that many cows don't feel well enough to ruminate/eructate is beneficial in keeping the throat area clear. If animals exhibit a strong desire to eat, we recommend removal of all bedding for several days so the space can start to heal.

Even with a rumen fistula, the amount of nutrition provided will not meet the cow's requirement but it will minimize the amount of weight lost. This is important because often owners and veterinarians fail to realize the amount of time needed to heal these lesions. Of the 13 cows which successfully recovered in this study, the average treatment period was 21 days with a range of 3-42 days. Owners should be aware of the possible protracted course of treatment so that they can intelligently decide how to proceed.

Along this same line, antibiotics selected for use should be made with thought to salvage. Procaine penicillin G was the first antibiotic used in 7/17 cattle because the drug had been approved for cattle, has an acceptable withdrawal, and is relatively economic to use. The new cephalosporin, ceftiofur, was used in cases 12 and 13 because of its broad spectrum and no withdrawal. Above all, aminoglycoside antibiotics should be avoided unless salvage is not a consideration (gentamicin = 150 days).

In the case of retropharyngeal abscesses, surgical drainage is essential to successful resolution. Here we have used ultrasonic imaging to determine location, capsule thickness, and abscess size prior to drainage. In most instances stab incisions and blunt dissection to and through the abscess wall is done externally using only local anesthesia. The preferential incision site is the ventral cervical area because it maintains ventral drainage. Remember, this area is highly vascular and attention must be paid to avoid excessive hemorrhage.

Ancillary treatments such as local hydrotherapy (hot packs) or direct irrigation of the wound may be done with some benefit. Direct irrigation can be used in already drained retropharyngeal abscesses but should be carefully considered before being used in a closed space because of the potential to push the infection further down the neck, possibly to the chest. For this reason, direct flushing of the wound is not done until the swelling has localized and is no longer descending the neck. Hot packing can be useful in localizing swellings and bringing abscesses to a head. It is, however time consuming and tedious with the benefits not being readily apparent.

Tracheostomy can be a life-saving procedure in animals with severe inspiratory dyspenea, as is occasionally seen with retropharyngeal abscesses. The tracheostomy need only be maintained until the abscess can be lanced and the trachea decompressed. Very few animals have required maintenance of the tracheostomy beyond 24 hours.

Summary

Pharyngeal lacerations are difficult to accurately assess and prognose at the time of the initial diagnosis. Endoscopy of the pharyngeal area and wound will enable the practitioner to more accurately predict the course of the problem. As a rule, cattle with diffuse swellings down the neck have a poor prognosis due to the development of tracts along muscle planes. It is recommended that a rumen fistula be made in cattle showing dysphagia to facilitate feeding and watering the animal. Totally depriving cattle of any oral intake during the first several days of treatment may be necessary in order to prevent refilling of the wound. Owners must be aware that the period of treatment can be long and shouldn't get discouraged if progress is slow.

References

Davidson HP, Rebhun WC, and Hebel RE Pharyngeal Trauma in Cattle *Cornell Veterinarian* (1981) 71:15-25