WELFARE GUIDELINES FOR VETERINARIANS PRESENTED WITH A SEVERELY LAME COW WITH DEEP DIGITAL SEPSIS

The purpose of this document is to provide a framework for the veterinarian presented with a severely lame cow in a beef or dairy herd, so that the case may be managed from the outset with the best outcome for the patient, the producer and the beef and dairy industry.

The handling of such a case presents specific challenges for the owner, the care-giver(s) and the veterinarian responsible for the cow’s treatment, and it is essential that the case is handled with compassion. A severely lame animal making its way to and from a handling area or milking center is of significant concern as we strive to provide humane and appropriate animal care while producing a safe food product. Veterinarians and livestock owners must be aware of these concerns and act on them.

Cows may become acutely severely lame due to a variety of lesions of the claw and limb. Animals with acute foot rot or digital dermatitis experience significant discomfort and require prompt attention, but are expected to recover rapidly after treatment and require limited additional care following effective initial therapy. Sole ulcers and white line disease are responsible for causing pain over a protracted period, but may be managed successfully with effective trimming and use of a hoof block to transfer weight from the site of the lesion. These lesions may be dealt with appropriately by trained hoof-trimmers and farm personnel, provided that they are identified quickly and treatment is administered promptly.

However, severe foot rot and lesions of the claw horn may become complicated, with infection spreading to the deeper tissues of the claw and the distal interphalangeal joint. This is particularly the case when lameness surveillance is poor and where there is a poor working relationship between the farm workers, the hoof-trimmer and the herd veterinarian. This deep digital sepsis must be recognized and treatment should be under the supervision and control of the herd veterinarian. A clear line of communication between the hoof-trimmer and the veterinarian is therefore a prerequisite for managing such cases.

The care and treatment of cows with severe lameness due to complicated lesions involving deep digital sepsis is the primary focus of these guidelines.

How do we recognize the severely lame cow with deep digital sepsis?

The following signs are typical:

1. Typically, one limb is affected and is almost non-weight bearing, and there is obvious swelling associated with the foot.
2. Some cows will be recumbent and unable to rise.
3. The swelling must be differentiated from the diffuse symmetrical swelling typically associated with an uncomplicated foot rot infection. Commonly, the outer-claw of the hind limb is affected with swelling around the coronary band, and cellulitis extending proximally above the fetlock. This swelling is typically asymmetric, associated with the affected claw, rather than the interdigital space.
4. Some cows may have a fever, and some may have a swollen hock – caused by altered lying behavior and difficulties rising.

It is essential that the hoof-trimmer is aware of these clinical signs and the veterinarian should be responsible for this training. The presentation of a cow with deep digital sepsis in the trimming chute should trigger automatic veterinary involvement. The cow should be diverted from the chute to a comfortable bedded area, where she can await veterinary attention. It is often convenient for the animal to be returned to the trimming chute where she may be examined by the veterinarian, while the hoof-trimmer is still present on the farm.

How many severely lame cows should we expect to see in a dairy herd?

Lameness surveys indicate that the best herds have no more than one severely lame cow per 100 cows milked, at any one time. Thus, the presentation of a severely lame cow with sepsis represents a signature case, indicating a need to investigate herd risk factors for lameness.
How do we decide whether to treat the cow?

The decision to treat the animal must be based on an assessment of the causative lesion. The animal must be restrained, preferably in a trimming chute, and the limb lifted and examined in an appropriate manner. If this cannot be done safely, removal of the animal from the herd is the only recourse left to the veterinarian. Animals which are unable to stand must be humanely euthanized on farm.

Following assessment of the lesion, treatment options will depend on:

1. The site and extent of the lesion
2. The life history of the cow with regard to parity, stage of lactation, milk production and pregnancy status
3. The expectations of the farmer for recovery in terms of subsequent herd-life and production, and length of convalescence
4. Ability to provide adequate pain control and after care

In many situations, removal from the herd is the best option for the owner and the patient. Currently, it is no longer permissible to ship these animals to a sales barn, so on farm euthanasia is the only option if surgery is not a treatment option.

Surgical procedures typically involve amputation of the infected digit or an alternative procedure which promotes ankylosis of the distal interphalangeal joint. Provided that the patient is ambulatory it is permissible for the animal to be shipped in an appropriate manner to a place of treatment such as a Veterinary Hospital. The relative merits of each surgical procedure should be discussed with the owner, so that there is a clear understanding of the requirement for intensive aftercare and special housing considerations, and it is essential that everyone involved understands that there will be a prolonged period of convalescence whatever the treatment.

The treatment and recovery plan

Control of pain and sepsis are the key problems we are confronted with when managing a case. Pain control begins BEFORE surgery. Non-steroidal anti-inflammatory agents such ketoprofen (Anafen® 3 mg/kg once a day) or intravenous flunixin meglumine (Banamine® at 2.2 mg/kg once a day for up to 3 days is licensed for beef and dairy cattle), or oral aspirin (2 x 240 grain boluses twice a day for an adult can be used in beef and dairy cows) is essential prior to, and for several days after surgery. Appropriate milk and meat withdrawals need to be observed.

Sepsis should be controlled by removal of the source of infection and broad spectrum cover using parenteral antibiotic. Antibiotics with short or nil meat withdrawals are desirable should recovery not go according to plan.

Dairy cows should not be kept in stanchions or tie stalls, and preferably not in a free stall barn without deep loose bedding. Distance to and from the milking parlor, feed and water should be minimized. The most appropriate place for after-care would be a well-managed bedded pack area or an area of sheltered pasture immediately adjacent to the parlor. The time spent in the special housing area will vary with severity of the condition, but the farm should expect a period of at least 7 days or until the animal is free of pain and able to rise and lie down without hindrance.

During the convalescent period, affected animals should be frequently monitored to allow assessment of pain and discomfort and to detect complications related to the disease or specific treatment. At least one follow up visit by the veterinarian should be made within the period 7 to 28 days after initial therapy. Timing and frequency of follow up visits will vary. It should be understood that some cases may require multiple visits for after-care. Hoof blocks, if applied, should be checked after 4 weeks and replaced or removed as needed.

If the animal is showing little improvement in lameness and the animal is still suffering pain and stress, euthanasia should be recommended.

From the AABP Bovine Lameness Committee (adapted for 2009 ON conditions by Gerard Cramer)
1. Animals that are partially disabled or completely unable to bear weight on the affected limb in association with some or all of the following clinical signs: poor body condition, slow movement with frequent stops, teeth grinding with drooling of saliva.

2. Deep digital sepsis is identifiable by the presence of swelling around the coronary band, usually localized to one affected claw in association with a complicated sole ulcer, white line abscess or foot rot.

3. Discuss after-care requirements and determine expectations for recovery with owner of the animal.