

Actinobacillosis In The Bovine

Dr. E. R. Frank*

INFECTION with *Actinobacillus lignieresii* is found frequently in the bovine here in the Middle West. Too frequently the term actinomycosis is used to include those lesions of both the soft tissues and bones of the head and mandible. As a general rule, we find actinobacillosis involving the soft tissue with *Actinomyces bovis* invading the bony tissue. Actinobacillosis is found most frequently in the region of the head but may become rather generalized involving almost any tissue of the body. Whenever an actinobacillosis abscess is opened the pus is very characteristic as it is non-odorous, very thick and tenacious, may be white or with a slightly yellowish tinge and containing a variable quantity of mucus.

The most frequent location of actinobacillosis is in the soft tissue posterior to the border of the mandible, and for this reason frequently called "lumpy jaw." The abscesses which are found vary a great deal in size and also in their depth in the tissue but most of them will be found in the subcutaneous tissue. Palpation of these abscesses reveals a very firm wall that is in many cases one-half inch thick and composed of hard fibrous tissue. The inexperienced examiner may conclude the enlargement does not contain pus due to its firm almost hard capsule. In some cases we may find one large abscess or a series of small abscesses on the lateral side of the mandible.

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Fig. 1

The tongue is frequently invaded by the infection producing a condition called "wooden tongue" and the tongue may lose part or all of its pliability. One of the first symptoms that may be observed in actinobacillosis of the tongue is excessive salivation as shown in Fig. 1. Also, the owner may notice the affected individual is taking more time to eat all of her grain. If the cow is in production there is usually a marked drop in milk flow. When the anterior or free portion of the tongue is affected it may protrude from the mouth occasionally or all of the time if it becomes markedly enlarged. If the ventral portion of the tongue is affected a marked swelling will be observed of the tissues in the mandibular space. This is observed in Fig. 2. Palpation of the tongue may reveal hard nodular areas or the firm tissue may be rather diffuse.

Also the tongue will not feel as pliable as normal, but rather stiff thus interfering with the prehension of food. When the animal is affected for a long period of time there will be a pronounced loss of condition. The subcutaneous tissue of the muzzle may become infected with a marked increase in its size as shown in Fig. 3. These cases are of rather rare occurrence.



Fig. 3

If the affected animal is showing a dyspnea it is an indication the infection has invaded the tissues in the post-pharyngeal region. A manual examination of the interior of the pharynx should be made with the mouth held open with a speculum. There are two conditions that usually produce a dyspnea as a result of actinobacillosis. The dorsal wall or roof of the pharynx should be examined carefully just above the posterior end of the soft palate. If there is an abscess in the post-pharyngeal region the roof of the pharynx will be pushed downward in a markedly convex curve at this point. When the abscess has been ruptured for some time exuberant granulation tissue will have developed around the edge of the opening. Either one of these condi-

tions will be responsible for a dyspnea. Occasionally we may find extensive involvement of the soft palate interfering with the passage of air. If the examiner is unable to find any reason for the dyspnea in the pharynx it is advisable to insert a finger into the larynx. Occasionally a large nodule will be found in the larynx as the result of infection with *Actinobacillus lignieresii*.

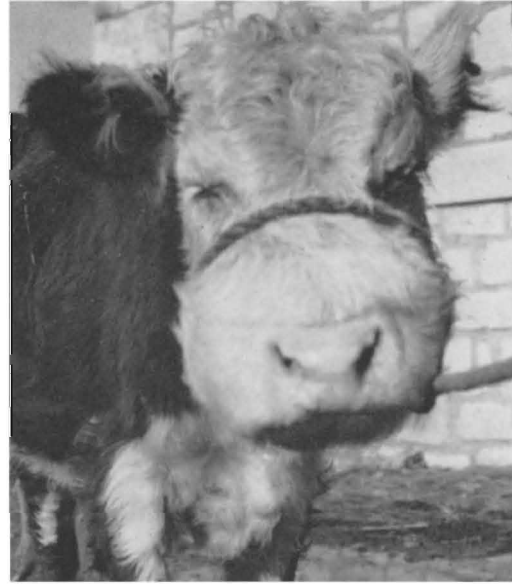


Fig. 3

Enlargement of one or both posterior limbs may occur when there is actinobacillosis of the skin and subcutaneous tissue. The subcutaneous tissue will be thickened, edematous and fibrotic with many small nodules containing the characteristic pus scattered throughout the tissue.

Treatment of actinobacillosis is usually very effective as it responds to the internal administration of iodine. The method of administration is not so important as it may be given orally or intravenously and equally good results will be obtained. But it is important to be sure the affected individual receives enough iodine to destroy the infection. In some cases 1 oz. will be sufficient while it may require several pounds of

iodine in another case before the infection is destroyed. The subcutaneous abscesses are opened surgically and the pus is removed. The infection is in the membrane lining the cavity and this may be removed by curretting or the use of escharotics. When the tongue is affected we use iodine internally and its use should be continued until the tongue has returned to normal. If treatment is discontinued too soon, in a short time it is more extensive than it was originally and the owner is convinced that treatment is useless for these cases.

When we find an abscess dorsal to the roof of the pharynx it is opened at the most pointed part of the convexity. A hook-bladed knife is carried in with the hand and an incision is made through the roof of the pharynx. By pressure exerted with the fingers the pus is forced out into the hand and is brought to the outside. This prevents the pus from being swallowed or aspirated into the lungs. The amount of iodine that seems to be indicated is then administered internally. In some cases where the mouth is too small to permit the introduction of the

hand, the abscess is not opened but the iodine is used internally with good results. If the abscess has ruptured and exuberant granulation tissue has formed around the edge of the opening this should be removed. The operator may have to use some ingenuity to accomplish this as it is difficult to use instruments in this location. However sometimes long scissors may be used or a looped section of obstetrical wire or both or some other instrument may be necessary. When there is extensive involvement of the skin and subcutaneous tissue internal administration will have to be continued until the parts have returned to normal.

Be sure to have sufficient floor space for the pullets when housing them. It is good practice to allow at least 3½ sq. ft. per bird for Leghorns and similar light breeds and 4 sq. ft. for birds of the heavier breeds.

A low calving percentage may be due to a poor management plan.

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