

Malignant Catarrhal Fever In Two California Dairy Herds

Leon D. Weaver, V.M.D.
Upland, California 91786

Summary

Two epizootics of malignant catarrhal fever in 1976 in Southern California were characterized by the peracute and acute form of the disease. In one 1,000 cow herd, 166 cows (17%) were affected. Clinical signs in acute cases were fever, diarrhea, weakness, ocular and nasal discharge, erosions of the muzzle and buccal papillae, and rapid progression to death. Diagnosis was confirmed by history, clinical signs gross and microscopic pathology and transmission studies.

Malignant Catarrhal Fever (MCF) has been studied and well characterized in Africa. It has also frequently been described in North America, but has generally been more sporadic and, therefore, not the subject of intensive studies to determine its etiology and spread on this continent. Recently, explosive and economically devastating outbreaks have been reported in Canada and Colorado.^{1,2} This paper will describe two such outbreaks in dairy herds in Southern California in the summer of 1976.

Both dairies are intensive, drylot operations. Dairy #1 is an 800 milking cow herd with an additional 150-200 dry cows. No young stock are kept on the premises. A migratory sheep flock, including ewes with lambs at their sides, was grazed on a pasture adjacent to the dairy cows for approximately one week. Cattle and sheep were separated by a ten foot wide access lane between the corrals and pasture. Cows being walked in the alley to the milking barn could have had direct contact through the fence separating the alley and pasture. No mingling of sheep and cattle ever occurred.

The first cases of MCF were observed approximately 60-75 days following the departure of sheep from the premises. During the next five months 23 animals died peracutely and acutely from MCF. Another 55 animals were salvaged in the advanced stages of the disease. Approximately 88 additional animals were detected very early in the disease and culled before overt clinical signs could develop. The time span between the first and last cases in this herd was 150 days. The overall mortality was 2.3%, but the total number of cases was 166 or 16.6%. There was 100% mortality of approximately twelve cases retained for observation. Analysis of disease incidence showed cases uniformly distributed throughout all corrals. Bulls kept for natural service were also affected.

Dairy #2 was a 250 cow facility with premises adjoining a property used to care for lambing ewes brought in from

various migratory flocks. No direct contact between sheep and cattle occurred. A hay and feed alley approximately 40 feet wide separate the sheep and cattle. Young stock are maintained on the dairy. During the five month period between March and August, six lactating cows were found peracutely dead in the corral. During this same period, an additional four cows and two heifers exhibiting classical signs of MCF were examined antemortem. The two heifers were purchased yearlings acquired three to four months earlier.

Both herds had MCF confirmed by history, clinical signs, gross pathology, and the characteristic histopathologic lesions. The disease was also transmitted by whole blood transfusions from affected animals on both dairies to calves maintained off the premises.³

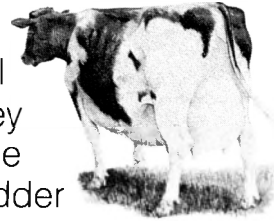
The clinical picture as it was seen on these two dairies took two forms: peracute and acute, although some cases may have become chronic had they not been culled. A significant number of animals died without previous signs of illness. These animals usually had few gross pathologic lesions. A fairly consistent finding was petechiation in the pharyngeal area. More commonly animals were found off feed with decreased milk production and an elevated temperature. Temperatures were almost always elevated from 104° to 107° F. Diarrhea was usually present and was occasionally profuse and bloody. Heart rates were always elevated. A fetid nasal and oral odor could invariably be detected. Generalized weakness and recumbency were common signs. Oral and ocular lesions were present in most cases, but usually consisted of mild to moderate hyperemia of the oral mucosa and conjunctiva (photograph 1). Close examination frequently revealed erosions of buccal papillae (Photograph 2). Animals that survived three to five days frequently developed more classical catarrhal oral and nasal lesions (photograph 3, 4). Approximately 10% of the cases exhibited ataxia and altered gaits. Necrotic and hemorrhagic skin lesions on the udder, legs, and interdigital areas were occasionally observed. Corneal opacity, eyelid edema, and blepharospasm were noted in a few cases (photograph 5). Hematology revealed an occasional slight leucopenia.

The progression of the disease from onset to death typically was 24 to 72 hours. Many animals in herd #1 were salvaged at the earliest signs of disease. Consequently, true mortality figures are not available. Cases kept for observation all died within 2-7 days.

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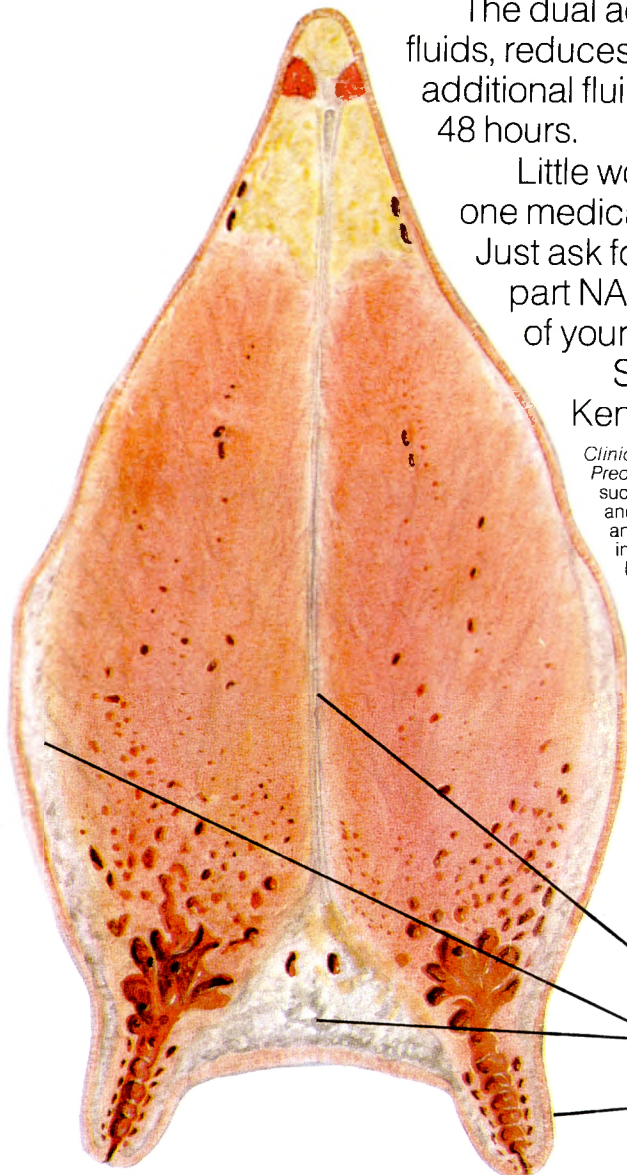
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Clinical synopsis: Response: visible in 24-48 hours; average recovery in 3-4 days.
Precautions: veterinarian should be aware of the possible side effects of dexamethasone such as suppression of inflammation, reduction of fever, increased protein degradation and its conversion to carbohydrate leading to a negative nitrogen balance, sodium retention and potassium diuresis, retardation of wound healing, lowering of resistance to many infectious agents such as bacteria and fungi, reduction in numbers of circulating lymphocytes. *Contraindications:* animals with severe renal functions, impairments and untreated infections. *Warnings:* Milk taken from dairy animals during treatment and for 72 hours after the latest treatment must not be used for food. Clinical and experimental data have demonstrated that corticosteroids administered orally or parenterally to animals may induce the first stage of parturition when administered during the last trimester of pregnancy and may precipitate premature parturition followed by dystocia, fetal death, retained placenta and metritis.

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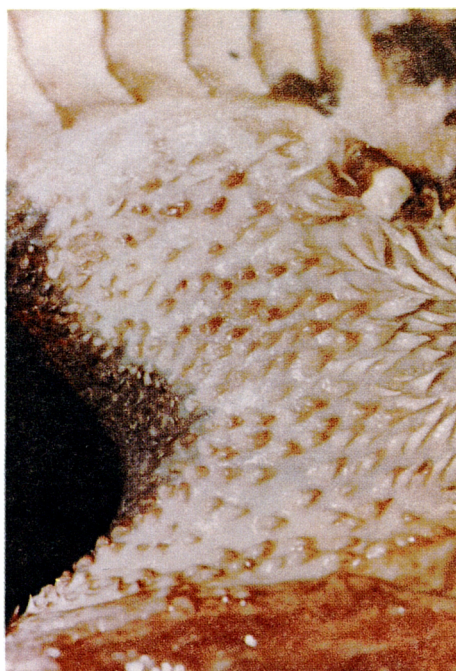
Strain on suspensory ligament
Excess fluid accumulation
Swollen teats

*Each bolus contains 200 mg. trichlormethiazide and 5 mg. dexamethasone.

MCF should always be considered a possibility in any disease outbreaks, characterized by fever, diarrhea, oral and nasal lesions (however slight), and high mortality. Confirmatory diagnosis can be difficult and treatment is of no value. A history of exposure to sheep may provide a signal to alert the practitioner to MCF as a possible cause of disease.



PHOTOGRAPH #1 Mildly hyperemic muzzle and salivary discharge--(early stage of disease.)



PHOTOGRAPH #2 Close-up of eroded, reddened buccal papillae.



PHOTOGRAPH #3 Ocular and nasal discharge was severely mild to moderate.



PHOTOGRAPH #4 Saggittal section of the nasal turbinate area revealing severe erosion and catarrhal discharge.

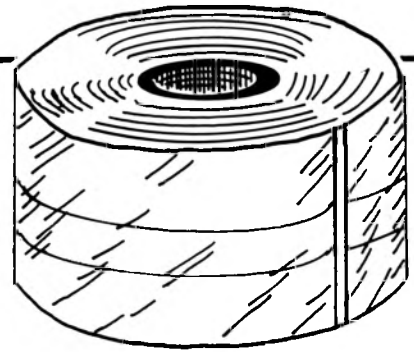


PHOTOGRAPH #5 Typical clinical signs several days after onset of disease. Note corneal edema, hyperemia of conjunctiva and denuded areas on muzzle.

Bibliography

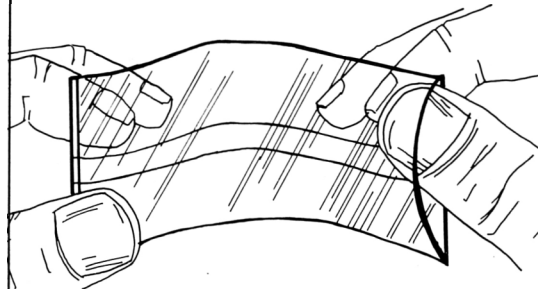
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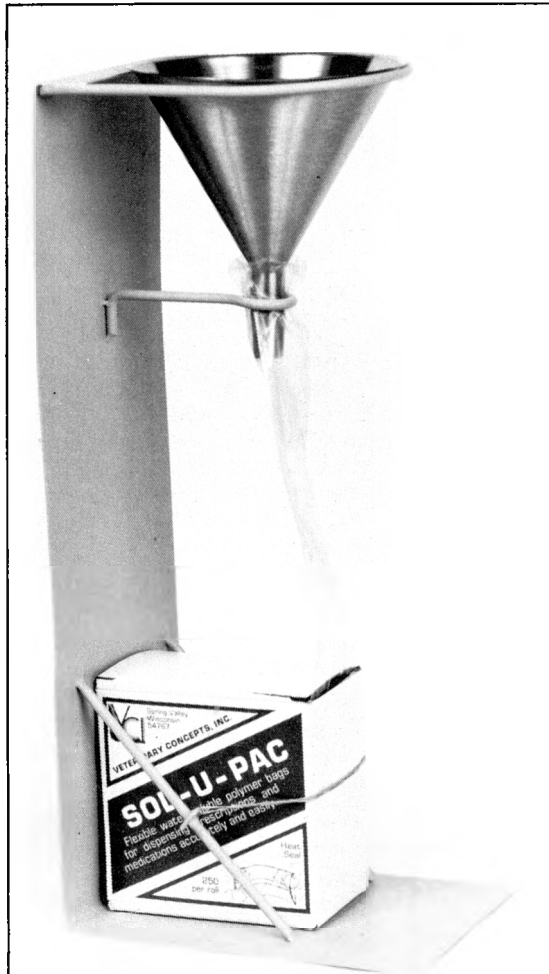
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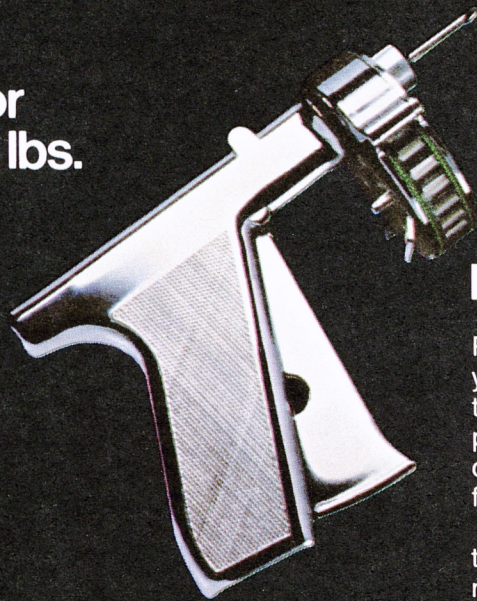
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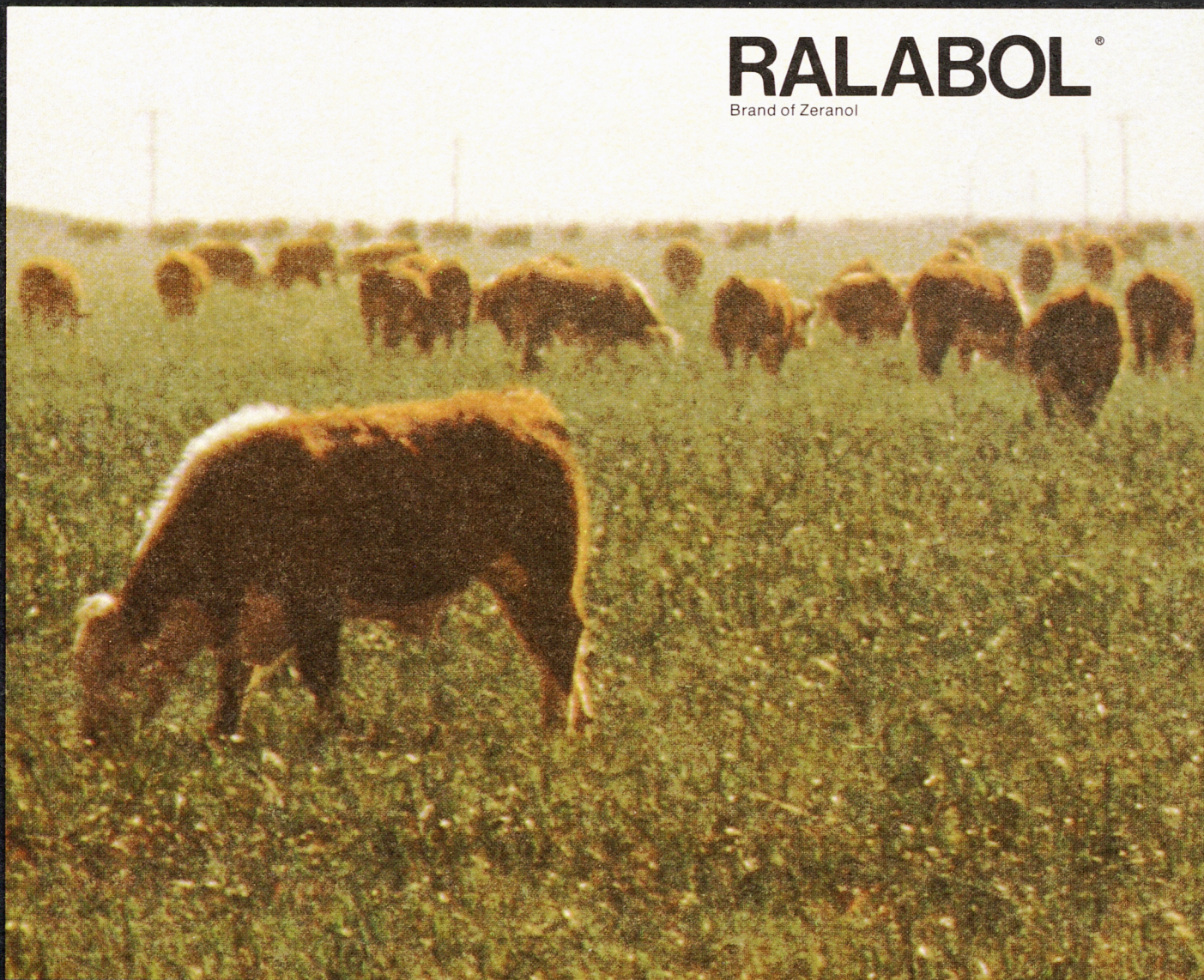
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