

# HARDWARE DISEASE

By I. A. Schipper

Hardware disease describes a condition or the result of the swallowing of foreign materials. Usually the material swallowed is metal, and cattle are mostly involved. However, sheep and goats often are victims. Nearly 7,000 cattle are condemned each year by the Federal Meat Inspection Service as unfit for food because of hardware disease.

A small or round object such as stones, nuts, washers and bolts in the first stomach (rumen), or the second stomach (reticulum), will usually cause no ill effects to the animal. Sharp objects such as nails, wire, or screws will produce injury to the lining of the stomachs resulting in infection and inflammation. When this condition exists it is referred to as traumatic gastritis.

Sharp objects may penetrate beyond the stomach wall and cause injury to any of the surrounding organs such as the heart, diaphragm, lungs, or liver. The resulting symptoms are also described as hardware disease. It is apparent that the term hardware disease covers a "multitude of sins."

More than 90 percent of traumatic gastritis occurs in cattle over 2 years of age, and nearly 90 percent of the involved cattle are dairy cows. More than 50 percent of foreign objects involved are vari-

ous forms of wire, with nails causing approximately 35 percent of the problem. Animals having a phosphorus deficiency will develop a depraved appetite and eat materials that will cause traumatic gastritis.

Though the losses from traumatic gastritis are hard to estimate, the big loss is apparent when the cow dies. Not so noticeable, however, is loss due to decreased milk production and weight-loss due to a lingering illness.

The symptoms of hardware disease are many and may appear singly or together. Often the first symptom noted is a decrease in milk production. Usually the cow will go "off feed" and appear to have a digestive disturbance. The animal may dislike to move about. The elbows have a tendency to bow outward. Feces may be scanty and firmer than normal. The animal will tend to stand with the front feet located on an elevated area to release the pressure of the viscera on the inflamed area. The temperature is usually elevated. Swellings may be noted under the jaw, brisket and hock joints. Male animals will be hesitant to carry out the act of breeding. The various symptoms of traumatic gastritis often appear following calving as a result of the muscular contractions required to expel the calf. These contractions often force the metal object deeper into the organs next to the stomach.

Prevent traumatic gastritis by careful cutting of wire bales to keep small pieces of wire from getting into the hay. The baling of hay with twine has done much to eliminate this problem.

Frequently a higher rate of hardware disease is encountered in a herd housed

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in a newly constructed or remodeled barn. The careless handling of nails should always be avoided.

The wire tag holders of feed sacks, bristles from steel barn brooms and many other sharp objects have been known to cause traumatic gastritis. The good livestock man always tries to keep these materials out of his cattle feeds.

At present, strong magnets are being used at the outlets of mechanical silo unloaders to catch any metal that may have been picked up in the process of harvesting. These magnets have been of unlimited value, particularly where grass silage is used. Feed manufacturers use similar magnetic devices during the processing of their products.

Electronic metal detectors are frequently employed as a means of determining the presence of metal in the cow. These apparatuses are of limited value in that many cows may have metal objects in their stomachs, but, because of the shape of these objects, penetration does not occur. A positive reading on the metal detector only indicates the presence of metal and not its size or shape. Symptoms, history and laboratory procedures are necessary for a definitive diagnosis.

Powerful magnets are available that may be placed permanently in the cow's second stomach to pick up any metal that may be present. Once the metal object has penetrated the stomach wall these magnets are of little value. Where a herd problem exists these magnets may be used to prevent further incidence of traumatic gastritis.

The only sure cure for traumatic gastritis is veterinary surgery. Surgery will be successful only if a diagnosis is made before the condition has progressed to the point that damage has been done to the heart or other organs. Medication with antibiotics or sulfonamides will give only temporary relief. Some animals will recover without treatment but usually this is only of a temporary nature.

It is well to remember:

- 1** Traumatic gastritis can be prevented through good management procedures.
- 2** Veterinary consultation when traumatic gastritis is suspected will be of great value in making an early diagnosis and in correcting this condition.
- 3** Veterinary surgery is the only sure cure for traumatic gastritis.

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