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Popular Article

Hidden Foreign Bodies in Livestock: A Silent Threat to Animal Health, Welfare and Farm Income

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Abstract:

Cattle and buffaloes often swallow objects that they cannot digest. Polythene bags, plastic sheets, cloth, rope, wire and nails enter the mouth along with feed and settle in the forestomachs. Soft materials gather in the rumen and slowly block the passage of feed. Sharp metal pieces lodge in the reticulum and may pierce its wall, which leads to pain and infection. Abattoir surveys show how widespread the problem has become. In a study of 810 ruminants in eastern Ethiopia, 52.1 per cent carried indigestible objects in the rumen or reticulum, and plastic made up 79.2 per cent of the material recovered (Negash et al., 2015). Hospital data are equally instructive. Among 503 cattle treated for traumatic reticuloperitonitis at a referral clinic, dullness was recorded in 87 per cent of cases, weak rumen movement in 72 per cent and fever in only 43 per cent, while all three standard pain tests were negative in 42 per cent of the animals (Braun et al., 2018b). Early signs are therefore easy to miss. Radiography locates metal objects reliably and ultrasonography shows inflammation of the reticular wall and nearby tissues, so the two methods work best together (Braun et al., 2018a). Treatment ranges from a rumen magnet with supportive medicines to rumenotomy, depending on the material involved and the damage already done. For the dairy farmer the loss appears as lower milk yield, poor body condition, treatment bills and, in some cases, the death of a productive animal. This article explains, in plain language, how foreign bodies enter the animal, what they do inside, how a farmer can spot early trouble, and which simple steps at the feeding trough prevent almost all of it.

Keywords: Foreign body syndrome, hardware disease, plastic impaction, reticulum, rumenotomy, animal welfare

A Problem That Starts Quietly:

A cow standing at the feeding trough can look perfectly well. She eats, chews her cud and gives milk as usual. Inside her forestomach's, however, trouble may already be building. A strip of polythene, a length of rope or a bent nail may have gone down with the fodder weeks earlier. Soft material of this kind gathers slowly and takes up space that belongs to feed. Sharp metal behaves differently. It settles in the reticulum and, with each contraction, presses against the wall until it works through.

What looks like a small accident can end months later as pain, poor digestion, infection, falling milk yield and, at worst, surgery. For the owner it is never a small matter. That is why the subject deserves attention on every farm, however small.

How Do Animals Swallow These Things?

Cattle and buffaloes do not choose to eat nails or polythene. Ruminants gather feed quickly with the tongue and swallow with very little sorting, so whatever is mixed with the fodder goes down with it. The risk rises sharply wherever animals meet waste. Common sources include:

- Open rubbish heaps and unfenced waste dumps
- Roadside grass mixed with discarded plastic
- Feeding areas that are never swept clean
- Broken fencing wire left lying in the paddock
- Building or repair work near the shed
- Fodder harvested from contaminated ground
- Household and farm waste thrown where animals graze

Farm cleanliness, then, is part of animal health care and not only a question of tidiness. Free ranging and stray animals in towns face the highest risk, since refuse dumps are often the only place they find something to eat (Priyanka and Dey, 2018).

Plastic in the Rumen: A Growing Concern

Plastic is everywhere in daily life, and it has quietly found its way into livestock feeding areas. Polythene bags and sheets cannot be broken down by rumen microbes the way grass and grain are. Each swallowed piece stays where it lands. Over months the pieces knit together into a heavy, tangled mass. Feed then moves through the rumen more slowly, gas builds up more easily, and the animal eats less.

Because the change is gradual, the early picture is easy to explain away. An affected animal may show a smaller appetite, less time chewing the cud, repeated mild bloat, a dull coat, a drop in milk and a slow loss of condition. Many owners put this down to season or feed quality. Abattoir surveys suggest how often the real cause is missed. In eastern Ethiopia, foreign material was found in 43.4 per cent of slaughtered cattle, and animals in poor body condition were affected far more often than those in good condition (Negash et al., 2015). Similar findings have come from India, Pakistan, Jordan and Nigeria. There

is a public health angle too. Additives can leach out of plastic sitting in rumen fluid, and their long-term fate in milk and meat is still poorly studied (Priyanka and Dey, 2018).

A Small Piece of Wire: A Large Problem

Sharp metal deserves separate attention. The reticulum is the first and most forward compartment of the bovine stomach, and its lining is arranged in a honeycomb pattern. Heavy objects sink into it and stay there. The reticulum contracts about once a minute during normal digestion. If a nail or a piece of wire is sitting in those folds, each contraction can drive the point a little further into the wall.

Once the wall is pierced, inflammation and infection follow. The condition is called traumatic reticuloperitonitis and is widely known as hardware disease. Pressure from a full uterus in late pregnancy or straining at calving can push the object further still, and in some animals, it travels through the diaphragm and reaches the sac around the heart (Braun et al., 2020). The name sounds complicated, but the lesson is simple. One small piece of wire can bring down a healthy, productive cow.

Table 1. Objects commonly recovered from the forestomachs of cattle and buffaloes and their usual effects.

Type of object	Where it usually settles	What it commonly does
Polythene bags, plastic sheets, silage wrap	Rumen	Builds up over months, blocks feed flow, causes repeated bloat and slow weight loss
Cloth, rope, jute, twine	Rumen	Forms a tangled mass, holds ingesta back, reduces appetite
Nails, pieces of wire, needles	Reticulum	May pierce the wall, causing pain, local infection and, at times, damage to the heart sac
Coins, bolts, nuts, stones, hair balls	Reticulum and rumen	Usually stay in place, add weight, irritate the lining and reduce space for digestion

The Silent Patient: Judging Pain Without Words

An animal cannot say where it hurts. It tells us through behaviour instead, and the changes are often small. Work on the Cow Pain Scale has shown that trained observers can judge pain in dairy cows fairly reliably by watching the position of the ears and head, facial tension, attention to the surroundings, the response to a person approaching, and arching of the back (Gleerup et al., 2015). A farmer who sees the same animals daily is usually the first to notice a change.

Signs worth taking seriously include reduced interest in feed, less frequent cud chewing, a sudden fall in milk, reluctance to walk or turn, an arched back, grunting on rising, dullness, fever, less dung than usual and steady loss of condition. None of these proves that a foreign body is present, since many diseases look similar. Still, any change that persists without explanation should be examined rather than watched.

Why Early Detection Matters:

Foreign body disease is deceptive. Some affected animals keep eating for weeks while an object is quietly doing damage. Clinical records make this plain. Among 503 cattle confirmed to have traumatic reticuloperitonitis, fever was present in fewer than half, and in 42 per cent of the animals all three of the classical foreign body pain tests came back negative (Braun et al., 2018b). By the time an animal looks obviously ill, infection is usually well established.

This is where a timely veterinary visit changes the outcome. Two imaging methods are now used routinely alongside clinical examination. Radiography is the better tool for finding metal and for checking whether an object has moved or attached itself to a magnet. Ultrasonography shows what radiography cannot, namely thickening of the reticular wall, fluid and fibrin around it, abscesses and reduced reticular movement. In the same series, ultrasonography showed changes consistent with peritonitis in 83 per cent of the cattle examined, while radiographs revealed foreign bodies in 96 per cent (Braun et al., 2018a). Together they give a clear picture before any decision about surgery is taken.

Does Every Case Need Surgery?

No, and this is worth stressing. The choice of treatment depends on the type of material, where it has lodged, how ill the animal is and whether complications have appeared.

- For metal objects that have not caused severe damage, an oral rumen magnet with antibiotics, anti-inflammatory drugs and fluids is often enough. The magnet holds the metal against itself so it can no longer press into the wall, and repeat radiographs confirm that it has done so (Braun et al., 2003; Braun et al., 2018c).
- When infection is advanced, an abscess has formed, or medicine has failed, surgery becomes necessary. Rumenotomy allows the veterinarian to open the rumen under local anaesthesia and remove the material by hand.
- For heavy plastic impaction, surgery is at present the main option, since a magnet has no effect on plastic (Priyanka and Dey, 2018).

The point for the farmer is straightforward. Surgery is the last step of a chain that started much earlier, on the day the animal was able to reach contaminated feed or waste.

The Cost Nobody Adds Up:

For a dairy household even a modest drop in yield hurts. The sequence runs like this. The animal swallows something indigestible. Digestion becomes uncomfortable and inefficient. Feed intake falls, milk yield falls with it, body condition declines, treatment costs begin and family income shrinks.

If complications appear, treatment stretches on and the bill grows. Some animals never return to their earlier production even after a successful operation, and a proportion do not survive. Set against all this, prevention costs almost nothing.

Welfare Matters As Well:

Farmers depend on their animals, and those animals feel pain. A cow with a penetrating foreign body rarely cries out. Her suffering shows up as slower movement, a changed posture, poor appetite and withdrawal from the herd. Good management asks two questions, not one. How much milk is she giving, and is she comfortable?

Prevention Begins at the Feeding Trough:

Almost every case is preventable, and prevention costs very little.

- Keep the feeding area clean. Plastic, rope, wire and nails should never be allowed to collect where animals eat.
- Check fodder before feeding. Take extra care with material cut from roadsides, near construction sites and from fields where fencing or machinery has been repaired.
- Maintain fences. Repair broken wire the same week and pick up every offcut from grazing and feeding areas.
- Keep animals away from rubbish, and store fodder under cover so that waste never reaches the feed.
- Ask your veterinarian about a rumen magnet for adult cattle in high risk areas, and fit magnets to chaff cutters and feed mixers where possible.
- Dispose of farm and household plastic responsibly. Burning or burying it near the shed only moves the problem.

What Should a Farmer Do If a Foreign Body Is Suspected?

If an animal shows lasting digestive upset, an unexplained fall in milk, or signs of abdominal pain, call a veterinarian without delay. Have the following ready:

- When the signs were first noticed, and how appetite has changed
- Whether cud chewing has slowed and how far milk yield has dropped
- Whether the animal can reach rubbish or contaminated feed
- Whether wire, nails or plastic have been present near the shed

Please do not attempt treatment on your own. Do not push anything down the throat, do not try to pull out a lodged object, and do not give medicines without advice. Such attempts usually cause further injury and delay the treatment that would have worked.

Five Points Worth Remembering:

1. **Plastic is not feed.** Keep polythene and packaging off the farm and out of the fodder.
2. **Wire and nails are dangerous.** Sharp metal pierces the reticulum and causes hardware disease.
3. **A change in milk matters.** An unexplained drop is often the earliest warning given.
4. **Do not wait for severe signs.** Fever and obvious pain appear late, and often not at all.
5. **Prevention is cheaper than surgery.** A clean trough costs less than a rumenotomy.

Conclusion:

Foreign bodies stay hidden for a while, but their effects do not stay hidden forever. A scrap of polythene, a length of rope or a bent nail looks harmless on the ground. Once swallowed, the same object can lead to poor digestion, pain, infection, falling production and sometimes an emergency on the operating table. The encouraging part is that this is one of the most preventable conditions in cattle and buffalo practice.

Clean fodder, responsible waste disposal, safe surroundings and a farmer who watches the herd closely will prevent the great majority of cases. Protecting animals from foreign bodies is about more than avoiding a disease. It protects the comfort of the animal, the productivity of the herd and the income of the family that depends on both.

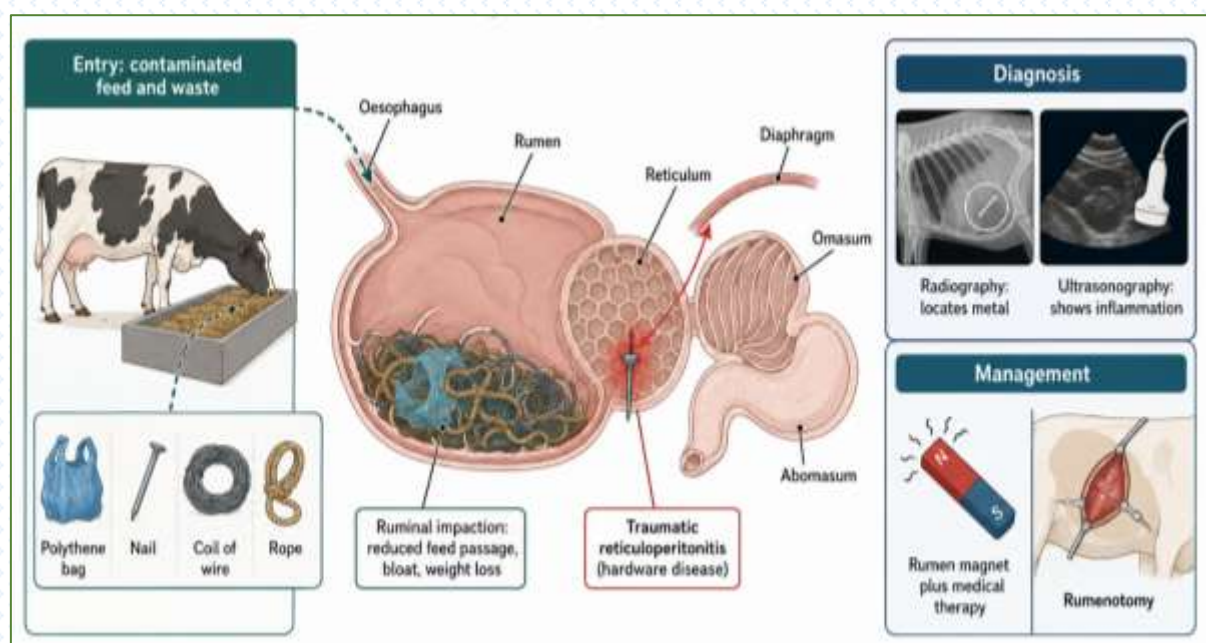


Figure 1. Journey of a foreign body through the bovine forestomach, showing contaminated feed entry, ruminal impaction by plastic and rope, and traumatic reticuloperitonitis caused by sharp metal. Diagnostic and treatment options, including radiography, ultrasonography, rumen magnet therapy, rumenotomy, and prevention measures, are illustrated.

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