and the ability to measure temperatures inside crates during transport can greatly influence decisions and reduce post-capture complications.

Place immobilized animals in the shade if possible. In the case of the larger species, cover them with branches and leaves or shade cloth. Monitor body temperature regularly and douse the animal’s body with water – a portable sprayer is useful (see Figure 14.1). Fan the animal to increase the rate of evaporative cooling. This is a very critical action to ensure that cooling does take place during humid conditions as just pouring water over the animal is often not enough to cool them. It is essential to have airflow over the animal to ensure that evaporative cooling does take place. In larger species, such as elephant and rhino, the use of a helicopter to cool the animal should be considered.

When animals are confined in crates or in compartments on the back of a vehicle, ensure airflow is adequate to avoid a build-up of heat and humidity. Plastic containers of water (20–40 litres) should always accompany an operation. If practical, hyperthermic animals can be given an enema of cold water to relieve high internal body temperatures. Intravenous shock therapy can be applied when practical and may be beneficial in some cases.

Take note that some species that live in very hot conditions and naturally run a lot (such as gemsbok and blue wildebeest) can tolerate very high core temperatures (40 °C) for short periods, but this is not a reason not to take adequate action to cool the animal whenever possible.

In cases where it appears efforts to reduce the body temperature of hyperthermic animals are failing, reverse the drug effects and release the animal as soon as possible.

14.4 BLOAT AND REGURGITATION

Immobilized ruminants must be positioned on their chest (sternal position) to allow the escape of gas, which is produced continually by the fermentation process in the rumen. Failure to do this will inevitably lead to the development of bloat, which is potentially fatal. If it is absolutely necessary, the animal can be laid onto its side for short periods only and if possible with the left side up. A second factor that predisposes animals to the development of bloat is the suppression of gastrointestinal motility by the opioids and α-2 agonists. As the animal bloats, the intra-abdominal pressure increases and restricts the movement of the diaphragm. This leads to a drop in respiratory volume and hypoxia, which may be followed by death.

Monitor the level of gas accumulation in the rumen by palpating the left flank behind the last rib and below the level of the lumbar muscles. As gas accumulates, the rumen wall bulges into this space. This should be monitored and assessed throughout the immobilization period. When bloat develops, steps must be taken quickly to limit the build-up of gas. Pressure may be relieved by passing a stomach tube into the rumen through the mouth. Assess whether gas escapes freely from the rumen when the tube is in place. If no gas...
escapes, blow air into the tube and this is usually successful in allowing the rumen gas to escape. Beware of fluid escaping if the rumen is full of rumen content or if the animal has recently drunk water. The danger in such cases is that when the tube is removed, rumen content will still be regurgitated and could be inhaled if the animal is not positioned properly.

An alternative approach that is effective in reducing rumen pressure is the placement of a large-bore hypodermic needle into the rumen. Choose a site about a hand-breadth behind the last rib and a hand-breadth below the lumbar muscles and plunge the needle through the skin into the rumen. If the bloat cannot be relieved, administer the antidote and abort the capture.

A common complication that accompanies bloat is the regurgitation of rumen contents, which may be aspirated into the trachea and lungs. If death does not follow immediately as a result of asphyxiation, aspiration of rumen contents into the lungs will cause foreign body pneumonia and death some time later. The aggressive handling of this situation is essential to ensure the survival of the animal. Hold the animal in a sternal position, lift the head so that the pharynx is as high above the mouth opening as possible. Hold the mouth open and pull the tongue out and to the side. Clear the throat of rumen contents by hand and continue to do so until the regurgitation has stopped. Administer a full dose of long-acting antibiotic and make the necessary arrangements to ensure that this is repeated every two days for at least a week. Anti-inflammatory drugs such as phenylbutazone must also be administered to help treat the severe inflammation that develops when rumen or foreign content enters the lungs. Shock therapy may be necessary during severe cases and prognosis of full recovery is generally poor if large quantities of rumen or foreign material are aspirated into the lungs.

14.5 CARE OF EYES

(See also Chapter 7: Principles of Chemical and Physical Restraint of Wild Animals)

Most immobilized animals cannot close their eyes. Therefore they become exposed to the deleterious effects of direct sunlight and the corneal surface can dry out. Prolonged direct exposure may result in severe retinitis and drying of the cornea, and can lead to ulceration and scarring both of which may result in blindness. It is essential

**Figure 14.2 a and b:** Care of the eyes in an immobilised or sedated animal is vital. With the eyes open, damage can occur from dust and grit, harsh sunlight and vegetation. Once the animal is safely restrained, the use of a blindfold to protect the eyes should be standard unless it is difficult to place the blindfold on safely. **a** Hippo under BAM sedation, eyes open and prone to drying; **b** White-eared kob male with blindfold.