

THREE CASES OF PERFORATED GASTRIC ULCER IN TIGER

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Bones are frequently ingested along with meat without discomfort by carnivores, but on some occasions pieces of bones may cause obstructions (Larsen, 1965). Three cases of perforation of stomach either due to a sharp bony splinter or due to gastric ulcer resulting in the death of tigers are reported here from Maharajbag Zoo, Nagpur.

Case I

A male tiger 'Shankar' aged about 15 years died on 5 February 1996 after a few days of anorexia and vomiting. Postmortem examination revealed patches of haemorrhage on ventricular epicardium, edematous right lung lobe with patches of alveolar emphysema and anthracosis of the other lobe, congestion and petachie of liver, sub-capsular pinhead-sized necrotic foci on spleen, thick tenacious blood-tinged material and hemorrhagic ulcerations of variable sizes in the stomach with perforating and obstructing sharp bone piece of approximately two inches at pyloric end with lemon sized abscess. The contents of stomach and the intestine were blood tinged and there was generalized peritonitis. The death was diagnosed to be due to hemorrhagic gastroenteritis with gastric perforation resulting in peritonitis and septicemia.

Case II

Tigress 'Gauri' aged about 15 years died on 26 August 1997 after illness for about five days. Postmortem examination revealed congestion of visible mucous membranes, heart, lungs and all the abdominal organs. The peritoneal cavity was filled with sero-sanguinous fluid and blood clots were found. The stomach revealed severe congestion and perforated ulcer on pyloric end. The perforation appeared to be a few days old as there was generalised peritonitis. No foreign body or bone piece was detected in the stomach or peritoneal cavity. The examination of the peritoneal fluid did not reveal any pathogenic bacteria. The case was confirmed to be perforation of gastric ulcer resulting in peritonitis.

Case III

Tiger, Chandu, aged about 11 years died on 6 January 2001 after illness for about five days. The post mortem examination revealed paranchymatus fatty infiltration of ventricles, congestion and alveolar emphysema of lungs, fragile congested liver with rounded borders and congestion of spleen and kidneys. Stomach showed several punched ulcers of approximately 4-5mm diameter with congestion of mucous membrane and clotted blood in the lumen. Intestine was congested with ingesta mixed with blood. The death was diagnosed to be due to rupture of gastric ulcer resulting in intra-luminal hemorrhage. However, the cause of this spontaneous rupture could not be ascertained.

The diet of carnivorous animals in captivity consists of flesh along with small pieces of bones which the animals frequently ingest. Gastric juices are capable of demineralizing small quantities of bones which are subsequently digested in the intestines (Larsen, 1965). The hair / feathers of prey along with small pieces of bone are occasionally seen in faeces of these animals, without any untoward results. But in the cases presented above, tiger Shankar died due to perforation of gastric ulcer by a sharp bone piece at the pyloric end resulting in hemorrhagic gastroenteritis, peritonitis and toxemia whereas tigress Gauri, succumbed to death due to perforation of gastric ulceration resulting in peritonitis. Tiger Chandu, succumbed to death due to spontaneous rupture of gastric ulcers resulting in intra-luminal hemorrhage. Paikne *et al* (1990) reported death in a lion due to hemorrhagic gastroenteritis probably as a result of toxic conditions. Larsen opined that the older canines are perhaps more likely to develop obstruction following ingestion of bones because of their reduced ability to chew them. In the above case, tiger Shankar was aged approximately 15 years. Rao and Acharjyo (1995a) also reported death in a male tiger of about 14-year old due to peritonitis that resulted from piercing of a sharp bony splinter through the wall of the jejunum. They also reported death in a Himalayan Yellow-throated Marten as a result of traumatic gastritis due to piercing of gastric wall with pieces of iron nails. The death of Shankar due to old age backs the view of Larsen that older animals may not be able to chew bones properly and these bones may cause obstruction, or if sharp, may occasionally cause perforation of stomach or intestine. Perforation could also occur if there is weakness of the musculature of gastrointestinal tract due to ulcers, as in the case of tiger Shankar. The perforation of stomach may not always result in peritonitis as the omentum efficiently seals the perforation, but unfortunately in the first two cases, the perforation led to generalized peritonitis and death in these animals. In the third case, the spontaneous rupture of gastric ulcers (due to increased peristalsis as a result of gastritis?) led to intra-luminal hemorrhage. Death in six bears and two civets due to rupture of gastric ulcers were reported by Rao and Acharjyo (1995b). They observed worm infestation in three cases but the cause of ulcers or its rupture could not be ascertained in other cases as also in Gauri and Chandu.

Chakraborty (1998) reported death in a 16 year old Himalayan Black Bear due to perforated ulcer at the lower part of oesophagus near cardiac end. *Candida* sp. was isolated from the gastric contents. Jubb *et al.* (1985) opined that the stress of confinement may play a major role in the development of ulcer and the candida which is an obligatory saprophyte is considered as opportunistic invader of gastrointestinal tract. In the present case also, this could be the reason for ulcer formation.

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NOTE

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MASS MORTALITY IN PEAFOWL (*PAVO CRISTATUS*) DUE TO HEAT STROKE IN FAMINE AFFECTED AREAS OF RAJASTHAN

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Heat stroke in animals is caused by prolonged exposure to excessive heat and humidity. Animals that move in hot sun experience fatigue. Lack of drinking water is also a predisposing factor. Excessive feathers in birds like kite, vultures, peafowl are additional factors in heat absorption. Birds lack sweat glands

and the only means of cooling off is by rapid respiration with their mouth open and their wings spread, which also leads to loss of body water.

In the present case, mass mortality in peafowls was reported from villages of Churu District, in the desert part of Rajasthan State. This place experiences extreme climatic conditions during winter and summer seasons. In the month of May 2000 during extreme drought, villagers in this area observed several carcasses of peafowls under barren trees. There was no water source for miles and feed material was also scarce. On the particular day of mass mortality, the day temperature was 46°C with high velocity hot winds. Human occupants had already deserted all nearby villages as they had migrated with livestock to greener pastures in nearby states. Non-availability of water, scarcity of food, heat wave and high temperature led to mortality in peafowls enmasse. People in the villages have a tradition of placing water in earthen pots and spread grains for birds to feed in front of their houses. But due to migration of the villagers, the birds were starved for water and food.

Case history

Within a period of 2-3 days, 89 peafowl carcasses were found scattered in and around areas of 4km² of sand dunes. During the period of five days a total of 120 peafowls, two kites and scores of crows were found dead. The carcasses of few peafowls were brought to this centre for examination in the laboratory within 8-10 hours of death. On necropsy, dehydrated musculature, several congestion of visceral organs, degeneration of liver and kidneys were found. The intestines were empty and collapsed. Marked thickening of the adrenal gland was recorded. Lungs showed severe congestion and trachea had exudate. As per observations of the villagers, a few birds fell from the trees and some birds were found lying barely alive on the sand dunes. These birds were sprinkled with cold water and given therapy i.e. inoculation of normal saline solution drip, placing of glucose-salt water mixture for drinking. This treatment could save a few birds. The cultural examination of body fluids and visceral organs in bacteria fungal culture media failed to reveal the presence of any pathogenic bacteria. Absence of any inclusion / elementary bodies in stained smears suggested the absence of viral / mycoplasma infection. These observations are in close conformity to the reports of heat stroke or sunstroke by Udall (1964).

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