

## CASE REPORT

### PATHOLOGY AND BIOLOGY

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## A Fatal Elephant Attack

**ABSTRACT:** A rare case of an elephant attack is presented. A 44-year-old man working as an elephant keeper was attacked by a cow elephant when he tripped over a foot chain while the animal was being medically treated. The man fell down and was consequently repeatedly attacked with elephant tusks. The man sustained multiple stab injuries to both groin regions, a penetrating injury to the abdominal wall with traumatic prolapse of the loops of the small bowel, multiple defects of the mesentery, and incomplete laceration of the abdominal aorta with massive bleeding into the abdominal cavity. In addition to the penetrating injuries, the man sustained multiple rib fractures with contusion of both lungs and laceration of the right lobe of the liver, and comminuted fractures of the pelvic arch and left femoral body. The man died shortly after he had been received at the hospital. The cause of death was attributed to traumatic shock.

**KEYWORDS:** forensic science, animal attack, elephant, *Loxodonta Africana*, fatal accident, injury pattern

Despite their popularity in zoos and circuses, elephants are among the world's most dangerous animals (1). They can attack and kill any other land animal, even the rhinoceros (1). In Europe and North America, fatal accidents with elephants are very rare and most frequently occur in zoos, circuses, and private member grounds (2,3). We present here a case of a fatal elephant attack and a survey of the most frequent causes of serious accidents involving elephants along with the most recent relevant literature.

### Case Report

#### *Forensic Circumstances and Observation*

A 44-year-old man was attacked by a female elephant in the African elephant pavilion when he tripped over a foot chain while the animal was undergoing medical treatment. The man was employed in the zoo as an elephant keeper. During the investigation, it was discovered that while the keeper was trying to administer an intramuscular injection to the elephant, he tripped over a chain fastened to one of the elephant's hind legs and fell to the ground. This provoked the elephant to attack unexpectedly. First, the elephant repeatedly attacked the man with her tusks while he was lying on the ground, and then, she lifted the man's body up with her tusks and flung it against the pavilion floor. The man died shortly after he had been received at the hospital, less than an hour after the attack. Further investigation showed that the elephant suffered from long-term intestinal colic, had rejected her usual food and was eating sand, and had also become irritable.

#### *Examination of the Body*

The autopsy revealed the body of a Caucasian male of stout build with a height of 1.7 m (5.6 ft) and weight of 90 kg (190 lbs). The external body examination showed the following wounds: In the parietal region of the head, three large lacerated wounds with the contused edges were found (Fig. 1). On the front part of the neck, a large band-like subcutaneous hemorrhage was found. Multiple superficial abrasions were located in the dorsal area of both shoulders and elbows. Below the navel on left side of the abdominal wall in the midclavicular line, there was an oblique and deeply penetrating lacerated wound measuring 7 × 2 cm with the prolapse of the loops of the small bowel (Figs 2 and 3). In the region of the right groin, a penetrating lacerated wound measuring 8 × 1.5 cm



FIG. 1—Three large lacerated wounds with contused edges were present in the parietal region of the head.

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FIG. 2—Below the navel on left side of the abdominal wall in the mid-clavicular line there was found an oblique deep penetrating lacerated wound.



FIG. 3—In the region of both groins penetrating lacerated wounds were present with contused margins and with contusion of thigh muscles.

was present with contused margins and with contusion of the thigh muscles (Fig. 3). In the region of the left groin, there were three additional deep stab-like wounds (Fig. 3) with contusion of thigh muscles and comminuted fractures of the proximal femur and the left part of the pelvis. The victim's skin showed almost no post-mortem lividity.

The internal examination of the victim's body showed coalescing hemorrhages in the soft pericranial tissue of the left parietal and temporal regions without skull fractures. The brain was edematous. There were multiple comminuted fractures of ribs with hemorrhage to the tissues of the chest wall and contusion of both lungs. The penetrating injury in the abdominal wall on the left side extended into the abdominal cavity, piercing the parietal peritoneum, perforating loops of the small bowel, and incompletely lacerating the abdominal aorta. There was 2000 mL of frank blood in the abdominal cavity without any clots. Internal organs were pale, especially the thyroid gland, spleen, liver, and kidney.

The only disease change that was found during the autopsy was the presence of fatty streaks in the intima of the abdominal aorta. The blood and urine alcohol concentrations were zero. Other

toxicological investigations of the blood and urine, applying routine methods, were negative. The conclusion of the medico-legal investigation was that the underlying cause of death was multiple stab wounds to the abdomen and to both groin regions. The cause of death was attributed to traumatic shock. The death was classified as accidental.

#### *Examination of the Elephant*

An 18-year-old adult female African bush elephant, living almost all her life in the environment of one zoo, caused a fatal injury. At the time of the attack, the elephant was suffering from chronic intestinal colic and for that reason refused to eat her normal diet and instead was often eating sand. Her tusks were 60 cm long; fresh blood found on them was proved to belong to the same group as that of the victim. The elephant died of a cardiac collapse as a result of the chronic intestinal disease 6 weeks after the fatal attack against her keeper. A subsequent autopsy of the elephant proved acute circulatory failure and chronic intestinal disease with dystrophic changes of internal organs. Also, a large amount of sand was found in the elephant's intestines.

#### **Discussion**

According to the medico-legal practice, fatal injuries caused by animals occur relatively rarely, almost always as an accident: most frequently, humans are attacked by domesticated or tamed animals, while injuries caused by wild animals happen less often (3). Injuries caused by animals are more often seen in the country rather than in urban areas (3). In the medico-legal literature are most frequently reported fatal and serious injuries inflicted by dogs (4–14), large cats (15–24), and bears (25–27).

Elephant attacks occurring outside the original habitat of the animal are extremely rare and usually occur in zoos, circuses, and arenas (3). Regarding elephants, the potential for severe injury is, above all, a result of the major weight difference between humans and adult elephants, whose average weight is four tons. In this aspect, elephants are rather dangerous in relation to humans (1).

Elephants are social animals who keep in highly organized groups formed by 10–12 female elephants and their calves. The group is usually led by a dominant female related to all of its members (1). Sometimes these groups gather temporarily into herds containing several hundreds of elephants. Male elephants live apart, forming bachelor herds, while older males live solitary lives (2). In the case of elephants living in captivity, it is necessary to respect the hierarchy within the entire group. If a keeper shows fear, elephants will often recognize it immediately and stop obeying him/her. On the other hand, excessive confidence exerted by the keeper can be equally dangerous.

One of the most common causes of unexpected elephant attacks against humans is that elephant is in the state called "musth" (1). Males and sometimes females go through "musth" season between their 15th and 20th years of age. During this time, elephants are considered to be very dangerous animals because their behavior changes radically: they become aggressive (1,2). Ordinary elephant obedience disappears; thus, fatal injuries may be caused if safety is not properly maintained (2). Typical for this musth season is a thick brown secretion running from the temporal gland; this secretion contains a large amount of male sex hormone. Besides sexual function, the sex hormone increases the aggressiveness of the animals. During "musth," the males engage in serious battles that can even be fatal (1,2). For this reason, male elephants are usually kept isolated from other members of the group (1). Belittling, not

recognizing, or belated recognition of this cyclic hormonal change may lead to an unexpected attack against a human (2).

Another reason why elephants are dangerous is that they frighten easily; when suddenly surprised, elephants begin to panic and their reactions are often unpredictable (1). Before attacking, elephants first raise their head and trunk and spread their ear lobes out to the sides in order to appear more powerful (1,2). The threat is intensified by pawing the ground with their forelimbs, stepping from one foot to another, wagging their entire body and lashing their tail. Elephants often run a little bit toward the enemy while trumpeting loudly (1). In case of a serious attack, elephants lower their head so as to point their tusks at their enemy. Their trunk is also coiled and ready to strike (2). An elephant attack against a human can arise as a result of serious disease or injury to the animal.

An elephant can inflict severe injuries to a man by pressing the man's body against a hard obstacle or by pushing the man's body—crushing—against the ground using the animal's bodyweight (1,2). Injuries originating as a result of the above-mentioned mechanism are often carried out by the elephant unintentionally.

However, by contrast, when the elephant feels threatened, it will often actively use its tusks against its adversary. Elephants can in this way cause serious penetrating wounds. Fatal injuries can also be caused by the mechanism of trampling—stomping (1).

In this particular case that we now present, the attack of the female elephant was provoked when the elephant was suddenly frightened by the keeper tripping over a chain that was fastened to one of the elephant's legs. The elephant's chronic colic increased her general reactivity to external stimuli and also contributed to the attack.

In the Czech Republic, this was historically the second ever recorded fatal elephant attack against a human. In the first case, a male African elephant bred in the zoo trampled his keeper; the elephant was euthanized after the attack. To the best of our knowledge, in the recent medico-legal literature, only one similar case of a fatal attack by a wild-living elephant has been described (3).

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