

## DENTAL LESIONS AND BITE WOUNDS IN EURASIAN OTTERS (*Lutra lutra*)

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### Abstract (??)

### Zusammenfassung (??)

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### Key words:

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As part of a long-term study to monitor the health status of otters in south west England post mortem examinations were carried out on 242 submitted between December 1988 and January 2002. The great majority (80%) had died in road traffic accidents but bite wounds were the second most common cause of death (1, 2). This report describes observations on bite wounds and dental lesions.

Bite wounds were commonly present, with 23 out of 102 females (22.5 %) and 35 out of 140 males (25 %) showing lesions. Bites to the head usually involved the cheek and/or lip. In some cases the wounds showed evidence of infection, with extensive cellulitis and necrosis involving the subcutaneous tissues and muscles. Bites to the feet were mostly confined to the central pad and/or the digits. In some cases the digits were amputated. Most bites in the perineal area were around the anus but often also involved the vulva or scrotum.

The consistent pattern of the bite wounds suggests stylised fighting and it is believed that the great majority were due to fighting with other otters (1, 2). In a few cases the size and spacing of the wounds were smaller and could have been inflicted by another species, possibly American mink, *Mustela vison*. Two cubs were killed by dogs and in these cases the lesions were distinct, with large puncture wounds, extensive bruising and fractured ribs.

All ages were affected, but it was noticeable that although two female cubs had died as a result of bite wounds, no male cubs of less than 4 kg were bitten. There was evidence of a higher incidence of wounds in otters in particular weight ranges. This was particularly noticeable in males between 5 and 5.9 kg where 60 % were affected. The incidence then dropped off progressively and was lowest in the heaviest otters. A similar, though less striking, pattern was seen in females with bites present in around 29% of animals in the 4 to 6 kg. range. As with males, lesions then became less frequent in the heavier animals.

The degree of wear on the teeth was recorded and any lesions noted. The general health of teeth was good, with very little calculus and no cases of caries. However, fractures and loss of teeth were common, with 46 animals (19%) affected.

Fractures or loss of incisors were recorded in 15 males and 7 females (9% overall). It might be expected that, as the teeth cannot be replaced, the incidence of lesions would increase with increasing age. However, this was not the case and lesions were fairly evenly distributed through the weight range of both sexes. Lesions were twice as common on the left side of the mouth as on the right.

Lesions affecting canine teeth were more common and fractures or loss were recorded in 11.6% of otters (19 males and 9 females). Frequently there was either a slab fracture or the tooth was

sheared off near the base, leaving the pulp cavity exposed. In most cases only one canine was broken but in several otters two or more were fractured and in some cases an entire tooth had been lost. Young animals were not affected and no lesions were seen in females of less than 4 kg or in males of less than 5 kg. As was observed with bite wounds, there was then a peak in the incidence of lesions as the body weights increased, followed by a decline in incidence in heavier animals. In both sexes the highest incidence of canine damage was in the weight range 6 to 6.9 g where around 28% of males and 21% of females were affected.

In some otters the canines on one side of the mouth were more worn than on the other, suggesting that they may be 'handed'. It was also observed that attrition of the enamel on the anterior/lateral aspect near the base of the lower canines was very common. It is assumed that this is caused by some aspect of feeding behaviour.

Lesions involving the cheek teeth were uncommon but often important. Fractures involving the fourth upper premolars, or carnassials, were seen in six otters, five males and one female. As with domestic dogs, this is a significant lesion and in two cases it resulted in a root abscess and osteomyelitis. The infection tracked through the bone dorso-laterally and led to severe cellulitis and necrosis of facial tissues, septicaemia and death. The largest otter examined, a male weighing 11.3 kg., also appeared to have died as a result of a tooth abscess. Unfortunately it was too autolysed for detailed examination. It had fractures to several lower incisors and premolars and a fracture involving the root of the lower right first molar. The latter had become infected, resulting in osteomyelitis and thickening of the ramus. This was the only lesion seen in a molar tooth.

It seems likely that that fractures to carnassial teeth are due to otters biting on hard material but fractures and loss of incisors and canines may often be due to fighting. In several cases fresh bite wounds were seen in otters that also had fresh tooth damage, particularly to canines. Ten out of the 28 otters with canine lesions (36%) had bite wounds, mostly to the head, feet and perineum, and 62% of otters with incisor damage had bite wounds. The fact that canine damage was less common in heavier, and therefore generally older, male otters is perhaps an indication that animals which have suffered serious damage as young adults are less likely to survive to full maturity.

The prevalence of bite wounds appeared to be fairly constant at around 15 - 17 % up until 1999 but in the year 2000 it was 32 %. This was large due to a marked increase in bitten females, four of which died as a result of their wounds. Mortality from bite wounds in 2000 was 12.5% whereas in earlier years it has been in the range 4 - 6.5 %. This figure is almost certainly an under estimate of the true mortality caused by fighting, as otters dying in road accidents are much more likely to be seen and submitted for examination than otters dying in the countryside. Mortality in otters from intraspecific aggression could be as important as road accidents.

## References

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