REASONS FOR THE PRESENTATION OF BADGER (*MELES MELES*) CASUALTIES TO A VETERINARY HOSPITAL AND OUTCOMES FOLLOWING TREATMENT.

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Introduction

Studies relating to the successful release following treatment of wildlife casualties are limited and suggest that the process may not always be successful (Kirkwood, 2003). Secret World Wildlife Rescue (SWWR) is a charity-funded specialist wildlife facility, working in partnership with Quantock Veterinary Hospital (QVH), that specialises in the rearing and release of orphan badger cubs, as well as the treatment of adult badger casualties. This poster reports some preliminary data on reasons for presentation of badger casualties and their outcomes following treatment.

Fig 1: *Admission*

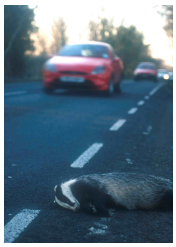

Fig 2: '*Found at roadside'*

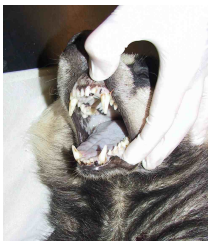

Fig 3: *Dental examination*

Materials /Methods

123 adult badger (*Meles meles*) casualties were presented to QVH over the period November 2002-July 2006 and details of the date, location and under what circumstances they were found by members of the general public (Fig. 1 and 2) were recorded. The animals were fully clinically examined (Fig. 3), where necessary using profound sedation (Fig.4) with a combination of Ketamine (5.0mg/kg) and Medetomidine (40μg/kg), and clinical tests such as biochemistry and haematology blood profiles, radiography (Fig. 5) and ultrasonography were carried out as medically required. Initial outcome options following assessment were; euthanasia, a period of hospitalisation at QVH, transfer for rehabilitation at SWWR or immediate release (Best and Mullineaux, 2003; Cosquer, 2005). Decisions were based upon clinical findings and the animals' eventual ability to survive once released back to the wild. Treatment was selected according to basic veterinary principle similar to those used in domestic small animal practice and extrapolated for badgers (Mullineaux, 2003a). After initial hospitalisation all animals considered suitable for rehabilitation were cared for by SWWR (Figs. 6, 7), tattooed (Fig. 8), then released back to the wild at the place they were originally found. There was no opportunity for continued post release monitoring. *M.bovis* infection is not considered a significant factor in the release of adult badger casualties, provided they are returned into the same area in which they were found (Secret World, 2003; Mullineaux, 2003b); evidence of clinical tuberculosis would be considered a reason for euthanasia.

Fig 4: *Monitoring under sedation*

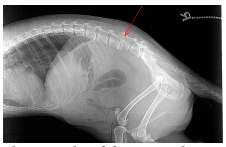

Fig 5: *Radiograph of fractured spine*

Fig 6: *SWWR hospital pens*

Fig 7: *SWWR outdoor enclosures*

Results

40/113 (35%) of casualties were found at the roadside, 23/113 (20%) in domestic gardens, 19/113 (17%) in domestic buildings, and 19/113 (17%) in farm buildings. 29/113 (26%) were described as 'paraplegic' or 'dragging their legs', 18/113 (16%) had wounds as their main presenting sign, 14/113 (12%) were presumed Road Traffic Accidents (RTA), 13/113 (12%) were found to be in the wrong place in absence of clinical signs, 11/113 (10%) were found recumbent or collapsed. Most of the casualties were presented in March 24/123 (20%) and April 11/123 (9%), with a second peak in casualties in August 11/123 (9%) and September 11/123 (9%). There were equal numbers (55/110) of male and female animals. 115 animals had records made regarding the presence of bite wounding; 65/115 (57%) were found to have wounds. 33/65 (51%) of those animals with wounds had them at multiple sites, most commonly the rump (Fig. 9), head and neck as reported elsewhere (Mullineaux and Kidner, 2008). 27/65 (42%) of badgers with wounds had concurrent injuries (Fig. 10). Animals with bite wounding came more frequently from gardens or buildings 41/58 (71%) than the road side 12/58 (21%).

Fig 8: *Bilateral tattoos*

Fig 9: *Rump wound*

48/123 (39%) animals were euthanased within 24hrs of presentation, 44/123 (36%) were transferred to SWWR for rehabilitation, 19/123 (15%) required further hospitalisation, 11/123 (9%) died and 1/123 (1%) was released. Of those animals surviving the first 24hrs 11/59 (19%) were euthanased, 6/59 (10%) died and 42/59 (71%) were eventually released. 5/40 (13%) of animals found at the roadside and 33/61 (54%) of those found in gardens or buildings were released. Of the badgers with bite wounds, 6/65 (9%) with wounds and concurrent problems were released compared with 25/65 (38%) with clinical evidence of wounding only. Time in captivity for all animals eventually released ranged from 1 to 49 days with a median of 17 days.

Fig 10: *Radius and ulna fracture*

Discussion

The movement of badgers into buildings following territorial disputes, as suggested by a high level of bite wounding in this study has been noted by others and has potential significance to the transmission of *M.bovis* infection (Garnett et al, 2002). Badgers were presented at the time of year when they are most active, foraging and breeding (Cresswell *et al*, 1992). Bite wounding was a frequent reason for presentation to veterinary surgeons as reported by others (Cosquer, 2002) although wounding is a frequent and relatively normal finding in healthy badgers (Cresswell *et al*, 1992, Delahay *et al*, 2006). The distribution of wounds was similar to that observed by other authors (Gallagher and Nelson, 1979, Delahay *et al*, 2006). Most deaths, and decisions for euthanasia, occurred in the first 24hrs following admission, reflecting the severity of some injuries or disease and of the triage process applied. The prognosis for animals found at the roadside following RTA was especially poor and parallels reports by others that RTA is the most common cause of death in badgers in non-tuberculous populations (Cheeseman *et al*, 1988, Clifton-Hadley *et al,* 1993). It may be postulated that those animals 'found at the roadside' are those unable to escape from the site of the accident have consequently have the most severed injuries. Evidence of previous RTA injury was a frequent finding in animals found elsewhere, suggesting that some animals survive the initial trauma without intervention. Evidence of previous injury or concurrent disease was a finding in some animals with wounding and suggests that wounding may be a secondary problem and less significant in the overall clinical prognosis for casualties than might first appear. This finding supports the need for a full clinical examination of casualties before decisions as to treatment and prognosis are made. Animals with wounds appeared to recover well although it is likely they would also do this if left in the wild without veterinary intervention (R.Delahay, *pers. comm*.). Many of the badgers spend reasonably long periods of time in captivity before released, no information is available as to how this influences the success of release in such a territorial species.

Conclusions

Badgers come into captivity through their contact with people predominantly as a result of road traffic accidents and through their movement into domestic buildings following injury and territorial disputes. Badgers can be treated successfully and regain a clinical condition considered suitable for their release. The prognosis for animals with bite wounding only, appears to be more successful than that for road traffic accidents and those with bite wounds and concurrent injuries. There is a need for more study, especially post release, to assess the true success of this process.

Acknowledgements

The authors would like to thank the other staff and volunteers of Secret World Wildlife Rescue and Quantock Veterinary Hospital for their work on this project and for their all their ongoing care of the wild animals trusted to us. The staff of the Central Science Laboratory, Woodchester Park and Leigh Corner of University College Dublin are also thanked for their ongoing support and advice.

References

Available on request