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I am a final year Student Veterinary Nurse at the Goddard Veterinary Nursing College. I work full time at a Goddard's branch in East London. I am passionate about exotic nursing and hope to gain further knowledge and experience in this sector once I qualify. I am the ISFM Cat Advocate in my branch whereby I ensure cat friendly practices are carried out. I will be taking on the role as peer reviewer for the student section of the VNJ which I am delighted about. I hope to encourage SVN's to have a voice and write in their experiences so others can learn from them. I look forward to reading your amazing stories, hints and tips!
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Rabbit hind limb amputation: case study

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ABSTRACT: This case study reviews the care given to a rabbit with severe trauma to his right hind leg. Following amputation, the wound became infected and required managing every 3–4 days causing additional stress to the patient. Whilst the outcome was positive, it is important to reflect on the care given to our patient's especially as student veterinary nurses, to ensure we improve for the next case that comes in. Evaluating case studies ensures that best practice is used to manage patients using evidence-based nursing.

Keywords: rabbit; hind-leg amputation; evidence based; student veterinary nurse

Case study

Buddy is a three and half-year-old Lop. On the 30th November 2019, Buddy got out of his cage and was attacked by a fox overnight. Buddy's owner took him to our veterinary hospital where he was diagnosed with a fracture of his right hind. Two treatment options were given: surgery followed by wet to dry dressings which may be able to save the limb, or amputation. If the owner declined treatment, it was recommended that Buddy was euthanised. Buddy was hospitalised for monitoring and analgesia whilst his owner made a decision.

The next day, Buddy's owner called and elected for amputation. Surgery took place on 2nd December. Buddy was very lively after surgery and he was hospitalised for a further two days with meloxicam, metoclopramide and enrofloxacin. Buddy went home with the same medication (See [Table 1](#)). Meloxicam is the most common analgesia to be used in rabbits due them tolerating it well and there is research available regarding dose rates (Varga, 2016).

Buddy was seen at my branch for post-op checks ([Figure 1](#)). We noticed at the second post-op check that the amputation site had broken down and necrosed. Quality of life was discussed at this point. Wet to dry dressings were recommended but the client had cost constraints. Buddy was seen back at the practice on 12th December 2019 for a recheck ([Figure 2](#)). His amputation site was infected.

Our veterinary surgeon recommended Buddy to be seen every three to four days for nurses to clean his wound starting on 17th December.

On 20th December 2019, at the second wound cleaning session, I contacted

Bandaging Angels and Matthew Rendle for advice. Following their advice, we cleaned Buddy's wound with iodine/saline and manuka honey. I handed over manuka honey for the owner to continue treatment at home with instructions for use.

Throughout treatment, Buddy was eating, drinking, urinating and defaecating normally. He did flinch a few times when we were cleaning his site but it is often difficult to assess when a rabbit is in pain (Varga, 2016). Buddy was on pain relief and the owner did not report any anorexia or change in behaviour. He was wearing a pet medic t-shirt to prevent patient interference.

Ten days after first clean wound, the right hindlimb was infected. The left hindlimb had swelling and an abscess (likely due to bacterial infection). An appointment was booked for quality of life check four days later.

Euthanasia was recommended on 31st December. The owner wanted to talk to his family first and so took Buddy home, where he continued cleaning Buddy's amputation site and applying manuka honey. The practice did not hear from the owner during the Christmas period and so I called him on 7th January 2020 for an update. Amazingly, he reported that Buddy's amputation site was fully healed, and he was very bright at home.

I booked recheck appointment two days later. The amputation site had completely healed which was unexpected given the circumstances before Christmas.

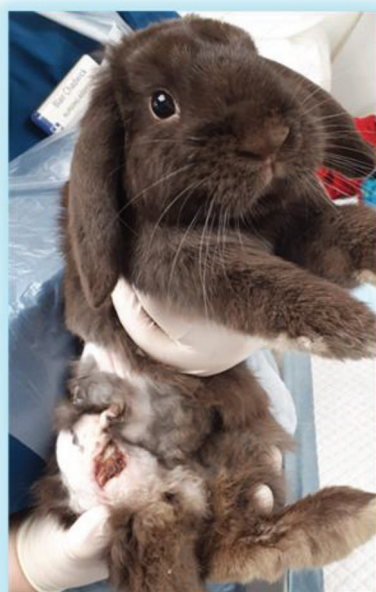
The process from fox attack to wound healing was around two months. I called Buddy's owner a few weeks later who reported that Buddy was doing great at home, but he

▲ Table 1. Medication dose rates.

Medication	Dose rate
Meloxicam (Metacam®)	0.6 ml once a day with food × 5 days
Metoclopramide	0.7 ml twice a day × 3 days
Enrofloxacin	1 ml once a day × 5 days



▲ Figure 1. Buddy.



▲ Figure 2. Buddy's surgical site post op.

noticed that Buddy had reddened areas over the amputation site due to being so lively.

Upon reflection, I feel that we had done everything we could for Buddy given the restrictions around the client's finances and trying to manage him as an outpatient. It could be argued that four days for a quality of life check may have been too long and ideally, the practice would have kept in closer contact with the owner.

The communication with the owner was made more challenging due to it being over the Christmas period, however, in this case the time at home made a positive difference. This highlights the point that seeing Buddy every three to four days was potentially causing Buddy extra stress and this added to complications with his amputation site. We should endeavour to reduce the stress by reducing his contact with predator species, handle as little as possible and assess pain levels (Foote, 2018).

When Buddy was in the comfort of his home for the week of 31st December 2019 to 7th January 2020 his amputation site had fully healed. I feel that the stress of visiting the practice every few days impacted Buddy's recovery time. Stress is indicated as a factor that affects recovery in the peri-operative period (Kelleher, 2008)

Evidence-based

I carried out evidence-based nursing on this topic to explore complications of hind limb amputations and found several articles as I felt we could improve the care we are giving our rabbit patients.

Northrup et al., (2014) reviewed the outcomes and owner satisfaction associated with limb amputations in rabbits. A total of 28 rabbits had pelvic limb amputations

and six rabbits had thoracic limb amputations were included in the study. At the last follow up 18 of the 34 rabbits died, nine were alive and seven were lost to follow up. Complications of amputations included difficulty ambulating, hygiene issues and pododermatitis.

However, the publication was taken from cases between the years of 2000 and 2009 and only a small number of rabbits were tested. It can be argued that the publication is now outdated which should be reviewed because veterinary nursing is always changing and evolving.

Bradbury (2016) showed evidence that handling rabbits above ground can cause stress with Foote (2018) identifying stress and handling as a major cause to lengthening post-operative recovery rates.

Conclusion

Although Buddy's case was successful in the end following a few complications, many patients sadly pass away after surgery. Close assessment of quality of life is important in these cases and rabbits can go on to live full lives post amputation. I have learnt a lot from reflecting on this case and completing research has helped me think about how I would approach a similar case in the future. Considering stress levels is essential and I will take this into consideration, I will communicate with the owner more closely for their opinion on their pet's level of stress and pain and see if there are alternatives to the rabbit having to come in for frequent visits.

Disclosure statement

No potential conflict of interest was reported by the author.

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