



Do Oral or Minimally Invasive Cheek Tooth Extraction Techniques Reduce the Incidence of Postoperative Complications in the Horse When Compared to Repulsion Methods?

Vicki Colgate et al.

Hi everyone. My name is Vicki Colgate, one of the three authors of this paper. And I'm currently working as a resident in clinical research at Rossdale's equine hospital.

I would like to welcome you all to this Knowledge Summary, that aims to answer the question, 'do oral or minimally invasive cheek teeth extraction techniques, reduce the incidence of postoperative complications in the horse when compared to repulsion methods.'

So we chose to research this question because although cheek teeth exodontia is a commonly carried out procedure in equine practice, it is often a complex surgery that has the potential to cause serious short and long-term complications for the horse. Furthermore, the traumatic nature of previously used punch and hammer repulsion through an osteotomy or lateral buccotomy incision, predispose to damage to surrounding structures and incisional infections, anecdotal reports of which make owners concerned about their horse undergoing an extraction procedure.

So we wanted to ascertain whether there is any published evidence to support our reassurances to them that the oral and minimally invasive techniques we use at the clinic are associated with fewer postoperative complications than in the more traditional repulsion methods. So we carried out database searches using CAB abstracts and PubMed that initially returned 1,614 papers. But after exclusion of those not in the English language or book chapters, review articles, single case reports and articles for non-peered review journals, this left just 10 relevant primary evidence studies in which equine cheek tooth removal was the main focus and where the surgical technique used and any complications encountered were reported so that we could focus directly on complications associated with the surgical technique chosen. Studies that focused on dental drift and the effects on mastication of exodontia, as well as complications associated with the general anesthetic that was carry out as part of the procedure, were also excluded.

Overall, our search revealed the published literature covering equine cheek teeth extraction techniques is sparse and of low evidential quality. The 10 papers are all case series reporting largely descriptive data on a single surgical technique with minimal statistical analysis. Additionally, as most of the studies own report on a single surgical technique, comparisons of techniques must be drawn between the different studies. And yet the direct comparability at these studies is limited by the heterogeneous equine populations, study designs and recorded data. Likewise, tooth removal may be carried out for a number of reasons, which is shown by the variation and scope of the inclusion criteria between studies. Yet the initial clinical presentation is likely to affect the extraction methods used and in turn, the outcome of the surgical procedure and any potential complications encountered. However, despite these limitations, the available literature gives us an indication of the most appropriate therapeutic course to take when presented with a horse that requires cheek tooth exodontia. There is almost universal agreement

amongst the published authors that with a lower incidence of complications, and a higher success rate oral extraction, understanding sedation should be the first-line treatment of choice for cheek teeth removal. However, the success of oral extraction does depend on appropriate case selection and where oral extraction fails or is unsuitable due to poor patient compliance, the presence of teeth with advanced disease that cannot withstand the forces of extraction or where there is too small a clinical crown to be grasped by instruments the alternative surgical technique is required. However, it should be noted even in cases that require aversion to a surgical technique and initial attempts at oral extraction are beneficial through leading to significant periodontal loosening that allows the first repulsion techniques to be carried out with less force, potentially leading to fewer complications. Evidence suggests the repulsion and lateral buccotomy techniques produce good long-term outcomes, albeit with some cosmetic imperfections, but at the risk of significant short term complications and morbidity make them likely to be largely unacceptable and undesirable to the owner. The minimally invasive extraction techniques such as MITSE have shown an improved success rate when compared to repulsion, but have actually so far failed to negate some of the serious postoperative sequelae associated with the complexity of the surgical approach. Thus the evidence so far suggests that there is no truly complication-free extraction method, but to definitively answer this PICO, further research is required in the form of a large multicenter prospective cohort study, utilizing strict inclusion criteria to minimize the presence of a confounding variable, or a gold-standard randomized controlled clinical trial.

Thank you for listening. And if you require any further information, please read the completed summary. Many thanks.

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/). Feel free to adapt and share this document with acknowledgment to RCVS Knowledge. This information is provided for use for educational purposes. We do not warrant that information we provide will meet animal health or medical requirements.