Short communication

Prosthetic reconstruction of broken canine teeth in dogs with use of cast metal posts

M. Bladowski1,2, A. Kotowicz-Gears2, D. Choszcz3, M. Pawelec4, J. Wojtkiewicz1

1 Department of Human Physiology, Faculty of Medical Sciences, University of Warmia and Mazury, Warszawska 30, 10-082 Olsztyn, Poland
2 Dental Research Center, Szarych Szeregów 5, 10-072 Olsztyn, Poland
3 Department of Technical Sciences, Faculty of Machines and Research Methodology, University of Warmia and Mazury, Oczapowskiego 11, 10-719 Olsztyn, Poland
4 Private Veterinary Practice, Bałtycka 138a, 11-041 Olsztyn, Poland

Abstract

Prosthetics, especially restorations of fractured teeth in small animals, has been the subject of many veterinary dental analyses in relation to techniques of endodontic treatment, preparation and cementation, as well as the general principles of prosthetic treatment. The purpose of this paper is to present a previously undescribed method of all-in-one crown and root prosthetic restoration of fractured teeth in large dogs, together with a thorough analysis of the drawbacks, which may help veterinary dentists to use an evidence-based approach when deciding on the type of treatment for their patients with tooth fractures.

Key words: canine tooth fracture, endodontic treatment, prosthetic treatment, cast metal post

Introduction

The dogs’ canines are the strongest teeth which are most exposed to mechanical trauma. The most common cause of a canine fracture is a traumatic event or injury. A tooth may be broken, e.g. by chewing on a hard object, a blunt force trauma to the dog’s face, fights or a minor car collision. Tooth fractures refer to injuries involving both crown and root. Vertical or subgingival root fractures are indications for extraction, whilst horizontal supragingival fractures, are indications for root canal treatment (RCT) and restoration. In young dogs, a thin layer of dentin together with broad dentinal tubules provide an insufficiently tight barrier to protect the pulp from infection, and even when primarily there is no pulp exposure, the pulp often becomes infected with consequent inflammation and necrosis (Bellows 2004). In dogs, the restoration of lost canines is usually achieved with the use of metal crowns. These provide restoration of lost shape and function, whilst being more resistant than composite materials, protecting the tooth from future breakage (van Foreest and Roeters 1998, Brine and Maretta 1999). A further aspect of a prosthetic crown is to achieve the highest possible tightness (Coffman and Visser 2007) which is necessary for the success of the RCT and prevents the development of periapical pathology (Niemiec 2000).