



# EVDSFORUM

The e-Bulletin of the European Veterinary Dental Society

ISSN 1580-6014

## 2014 On a Cruise ship

23<sup>rd</sup> European Congress of  
Veterinary Dentistry



## Prague 2013

22<sup>nd</sup> ECVD and 12<sup>th</sup> WVDC



## Case report

Fixation of a rostral mandibular fracture  
in a cat with a lingual arch bar

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Dear EVDS members

The importance of veterinary dentistry is widely underestimated. This fact is partly due to the lack of customer compliance but also to the lack of interest and/or knowledge of the veterinarians. The **e-VDS – the electronic Veterinary Dental Scoring** programme may help to improve the situation. It is designed as tool for communication with the clients and we hope we can encourage many veterinarians throughout the world to have a closer look at the oral cavity of their patients. We are happy about every one promoting the e-VDS.

With the attached tutorial the e-VDS also has an educational value. Its content is of practical interest, can help the practitioner making decisions and is available for veterinarians who register at our website.

Again our intent is to encourage new veterinarians with interest in this subject to become future members of our society.

Finally the last congress was a success and we thank the Czech Local Organizing committee for welcoming this unique event which joined the World and European congresses.

All the best

Gottfried Morgenegg  
President EVDS

# Dental Implants...



## ...Great for your Patients and Great for Your Practice

Pre-Print Article 2012

Written By Dr. James Anthony, Dr. Rocco Mele and Dr. Harold Bergman



The European Veterinary Dental Society and  
the European Veterinary Dental College  
invite you to the

## 23<sup>rd</sup> European Congress of Veterinary Dentistry On a Cruise Ship

### 6<sup>th</sup>-10<sup>th</sup> May 2014

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## 23rd European Congress of Veterinary Dentistry

### CALL FOR PAPERS

The EVDS (European Veterinary Dental Society) and EVDC (European Veterinary Dental College) welcome proposals for papers to be presented at the 23rd European Congress of Veterinary Dentistry. Venue will be a cruise ship between 6 to 10<sup>th</sup> May with departure from Marseille.

Papers within all fields relating to veterinary dentistry, including small animal, equine and exotic dentistry, will be considered for presentation. Either 25 or 50 minutes speaking time (including 5 minutes time for discussion) will be allowed for review lectures, original clinical studies and original research studies. 10 minutes speaking time will be allowed for brief case reports. The organizing committee, however, will make decisions on the lecture schedule. Posters are also welcome for exhibition; please indicate dimensions in centimeters.

Proposals should be submitted to the ECVD Scientific Committee to arrive no later than **15<sup>th</sup> of August 2013** using the on-line form available on <http://www.evds.org/cruise>

Speakers will receive 50 % discount and poster authors receive 20% discount on the registration fee for the main scientific program of the Congress (but not on the Cruise). Speakers, who have two or more presentations accepted for the program, will have free registration to the main scientific program. The best poster submission will be rewarded with a prize.

Notification of acceptance will be sent no later than **15th September 2013**

For more information on the meeting visit the ECVD web site <http://www.evds.org>



## European Congress of Veterinary Dentistry

May 6<sup>th</sup>-10<sup>th</sup> 2014

### On a cruise ship in the Mediterranean

In 2014 the European Veterinary Dental Society (EVDS) and the European Veterinary Dental College (EVDC) will be organising the annual European Congress of Veterinary Dentistry (ECVD) in a different way because the congress will be on a cruise ship.

#### Why on a Cruise?

On one hand we wanted to offer something different for a change but we also looked at results from our surveys: one group suggested extending the congress because the compact programme hardly allowed meeting other delegates. Another group of interested delegates would not come because of their family. Being a partner of a delegate is always a frustrating situation. Either they stay home or they come along and are mostly alone. The cruise with all the sport and leisure equipment on board as well as the trips during the stops provides a perfect opportunity to combine education and family time.

#### The cruise



The congress will be held on a regular cruise ship where we will occupy a reserved area. It is a round trip from Marseille (F) with stops in Savona (It), Barcelona (Sp) and Ibiza (Sp). We offer an all-inclusive arrangement with cabins in five different categories. The cabins are for double occupancy, single use will have a surcharge. The overall price includes accommodation, meals and drinks and is quite reasonable compared the same costs for other congresses.

Marseille is well connected with 42 direct destinations to European cities, 3 in America, 22 in Africa.

#### The Boat



The ship 'Luminosa' from Costa Cruises is a modern boat with 1038 cabins. It is a 5-year old ship with modern standards but it is not a luxury cruise as can be seen by the price. For further information about the boat please see:

[http://www.costacruise.com/usa/costa\\_luminosa.html](http://www.costacruise.com/usa/costa_luminosa.html)

#### Not a 4-Day-Party

An all-inclusive cruise may mislead you to assume it will be a huge party. Not at all, it will be the opposite. We plan to offer a very intense working time and keep the delegates in the lectures with an outstanding programme: There will be at least as many lecturing hours as during normal congresses but they will be spread over three and a half days instead of only two. The lectures will be held in two streams and parallel to it a stream with workshops and discussion groups in small classes run by the college. We plan two blocks of lecturing every day, a morning session (about 8- 12) and an evening session (after the excursion, before dinner). The lectures will be mainly while cruising but may partly overlap with harbour time.

## Scientific Programme

To gain attraction by interested veterinarians we are trying new ways. There will be a whole keynote session on '**Complications in Veterinary Dentistry**'. We were lucky to have three very well known speakers who will also present individual lectures:

### Frank Verstrate:

Veterinary Dentistry – Quo Vadis  
Oral anatomy - a fresh look at an old subject

### Alex Reiter:

TMJ – Disorders – Diagnosis and Management  
Periodontal Therapy for the Next Decade

### Brook Niemiec:

Tooth Discoloration – Diagnosis, Management, Prognosis  
Anaesthesia and Pain Control: my Favourite Protocols in Oral Surgery

### David Crossley Lecture

For the first time there will be a 'David Crossley' lecture and the founder will give the presentation himself on: Basic Selection and Maintenance of Equipment

Our first goal is for the delegates to remember the congress because of the interesting lectures, not because of the cruise.

## Events

Gala dinner

The traditional Gala dinner will be on deck if the weather allows.  
After the menu there will be dancing music.

Savona:

A large harbour city on the Italian coast of Liguria

Barcelona:

With its special old town Barcelona is a jewel

Ibiza:

A holiday destination with fantastic beaches

## Prices and registration

The offers include everything but excursions, Wifi, spa and personal expenses.

Sponsors and accompanying persons get a discount of 340 €.

The registration is performed by the tour operator Croisirama.

For further information see <http://www.evds.org>.

## Note:

This is a special overall package. If you do not book via our tour operator you will not be able to attend our extra events (lunch, coffee break, cocktails, Gala dinner etc.)

We could reserve a limited amount of cabins. We advise you to book as early as possible.



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# 2013

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16-20 September    Dentistry III (ESAVS)  
 >> Halmstad, Sweden  
 Dr. Cecilia Gorrel DEVDC (UK),  
 Dr. Margherita Gracis DEVDC, DAVDC (IT)

More info. <http://www.esavs.net>

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3-6 October        Veterinary Dental Forum  
 >> New Orleans, USA

More info. [www.veterinarydentalforum.com](http://www.veterinarydentalforum.com)

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24-26 October     VIII Congress of the Spanish Veterinary Dental Society  
 >> Hotel AC Madrid Feria, Madrid, Spain

More info. <http://www.evds.info>

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5 December        4<sup>th</sup> Congress of the Swiss Society of Veterinary Dentistry  
 >>Neuchâtel, Switzerland  
 Dentistry in Rabbit and Rodent  
 Dr. Estella Böhmer (GER)  
 Dr. Line Baumberger (SUI)

More info: Dr Philippe Roux | [proux@net2000.ch](mailto:proux@net2000.ch)

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# 2014

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6-10 May            23<sup>rd</sup> European Congress of Veterinary Dentistry  
 >> Cruise ship. Departure Marseille

More info: <http://www.evds.org>

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## Equine Dentistry

### Isolation of *Treponema* and *Tannerella* sp from equine odontoclastic tooth resorption and hypercementosis related periodontal disease

Equine Vet J. 2013 Jun 7.

[Sykora S](#), [Pieber K](#), [Simhofer H](#), [Hackl V](#), [Brodesser D](#), [Brandt S](#).

**REASONS FOR PERFORMING THE STUDY:** Red complex bacteria, i.e. Porphyromonas gingivalis, Treponema denticola and Tannerella forsythia, are involved in the onset and progression of human periodontal disease, yet seldom inhabit the oral cavity of healthy individuals. Periodontal disease is also encountered in horses, with equine odontoclastic tooth resorption and hypercementosis (EOTRH) constituting a particular form of disease. However, only little is known about the oral microbiome of healthy and periodontitis-affected equids.

**OBJECTIVE:** We aimed to test the hypothesis that red complex bacteria are also associated with EOTRH related periodontal disease.

**STUDY DESIGN:** Controlled cross-sectional study.

**METHODS:** We screened DNA purified from crevicular fluid derived from 23 EOTRH-affected and 21 disease-free horses for the presence of Treponema ssp., Tannerella ssp. and Porphyromonas gingivalis DNA by PCR. Subsequently, amplified DNA was bi-directionally sequenced and identified via BLAST analysis.

**RESULTS:** Treponema and/or Tannerella DNA were detected in 100% of periodontitis-related samples and in 52.2% of DNA derived from healthy horses. Twenty-six amplicon sequences were 98 to 100% homologous to published bacterial sequences, which mostly corresponded to Treponema pectinovorum, oral Treponema clones JU025 and OMZ 840, and Tannerella forsythia. P. gingivalis DNA was only found in 3 EOTRH-related samples. Forty-three amplicon sequences revealed weaker homologies ranging between 80 and 97% to known Treponema or Tannerella strains, partly because of their heterogeneity, partly because they obviously represented so far unknown types.

**CONCLUSIONS:** This is the first report in which known and novel Treponema and Tannerella ssp. were isolated in association with EOTRH related periodontal disease.



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## Research

### Performance of the experimental resins and dental nanocomposites at varying deformation rates.

J Investig Clin Dent. 2013 Jun 14.

[Kumar N](#), [Shortall A](#).

**AIM:** The aim of the present study was to evaluate the bi-axial flexural strength of experimental unfilled resins and resin-based composites at varying deformation rates following 1-week dry, 1-week wet, and 13-week wet storage regimes.

**METHODS:** A total of 270 disc-shaped specimens (12 mm diameter, 1 mm thickness) of either unfilled resins or experimental resin-based composites comprising of three groups (n = 90) were fabricated. Three groups of each unfilled resin and resin-based composites (n = 90) were stored for 1 week under dry conditions, and at 1 and 13 weeks under wet conditions (37 ± 1°C) before testing. The bi-axial flexural strength of each unfilled resin and resin-based composites group was determined at a 0.1, 1, and 10 mm/min deformation rate (n = 30).

**RESULTS:** The unfilled resins revealed a deformation rate dependence following all storage regimes; however, the addition of fillers in the unfilled resins modified such reliance following the 1-week dry and 13-week wet storage regimes. In contrast, a lower bi-axial flexural strength of the 1-week wet resin-based composites specimens at a 0.1 mm/min deformation rate was identified.

**CONCLUSION:** A lower bi-axial flexural strength of the 1-week wet resin-based composites specimens at a low deformation rate suggests that premature failure of resin-based composites restorations might occur in patients with parafunctional habits, such as bruxism.

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## Small Animal

### Computed tomographic findings in dogs and cats with temporomandibular joint disorders: 58 cases (2006-2011)

J Am Vet Med Assoc 2013;242:69-75

[Arzi B](#), [Cissell DD](#), [Verstraete FJ](#), [Kass PH](#), [DuRaine GD](#), [Athanasiou KA](#).

**OBJECTIVE:** To describe CT findings in dogs and cats with temporomandibular joint (TMJ) disorders.

**DESIGN:** Retrospective case series.

**ANIMALS:** 41 dogs and 17 cats.

**PROCEDURES:** Medical records and CT images of the skull were reviewed for dogs and cats that were examined at a dentistry and oral surgery specialty practice between 2006 and 2011.

**RESULTS:** Of 142 dogs and 42 cats evaluated, 41 dogs and 17 cats had CT findings consistent with a TMJ disorder. In dogs, the most common TMJ disorder was osteoarthritis; however, in most cases, there were other TMJ disorders present in addition to osteoarthritis. Osteoarthritis was more frequently identified at the medial aspect rather than the lateral aspect of the TMJ, whereas the frequency of osteoarthritic involvement of the dorsal and ventral compartments did not differ significantly. In cats, fractures were the most common TMJ disorder, followed by osteoarthritis. Clinical signs were observed in all dogs and cats with TMJ fractures, dysplasia, ankylosis, luxation, and tumors; however, only 4 of 15 dogs and 2 of 4 cats with osteoarthritis alone had clinical signs.

**CONCLUSIONS AND CLINICAL RELEVANCE:** Results indicated that TMJ disorders were frequently present in combination. Osteoarthritis was the most common TMJ disorder in dogs and the second most common TMJ disorder in cats. Computed tomography should be considered as a tool for the diagnosis of TMJ disorders in dogs and cats with suspected orofacial disorders and signs of pain.

### Outcome of surgical endodontic treatment in dogs: 15 cases (1995-2011)

J Am Vet Med Assoc. 2012 Dec 15;241(12):1633-8.

[Fulton AJ](#), [Fiani N](#), [Arzi B](#), [Lommer MJ](#), [Kuntsi-Vaattovaara H](#), [Verstraete FJ](#).

**OBJECTIVE:** To document the short- and long-term outcomes of surgical endodontic treatment in dogs in a clinical setting.

**DESIGN:** Retrospective case series.

**ANIMALS:** 15 dogs that underwent surgical endodontic treatment.

**PROCEDURES:** Medical records of dogs that underwent surgical endodontic treatment at 3 institutions from January 1995 to December 2011 were reviewed. Information extracted included signalment, history, initial clinical signs, physical and radiographic examination findings, treatment, and outcome. Outcome was determined through evaluation of the pre- and postoperative radiographs as well as clinical and radiographic findings at follow-up evaluations. On the basis of radiographic findings, treatment was considered successful if the periapical lesion and bone defect created by surgery had completely healed and no new root resorption was detected; a treatment was considered to have no evidence of failure if the periapical lesion remained the same or had not completely resolved and root resorption was static.

**RESULTS:** 15 dogs were treated by means of apicoectomy and retrograde filling following a failed or complicated orthograde root canal treatment. The mean long-term follow-up time was 15.2 months (range, 3 to 50 months). On radiographic evaluation, 10 of 15 dogs had successful resolution of the periapical disease; 5 dogs had no radiographic evidence of failure of endodontic treatment. All dogs were considered to have a successful clinical outcome.

**CONCLUSIONS AND CLINICAL RELEVANCE:** Surgical endodontic treatment was an effective option for salvaging endodontically diseased but periodontally healthy teeth of dogs in which orthograde treatment was unsuccessful and nonsurgical retreatment was unlikely to succeed.

## Research

### **Predictive, preventive, personalised and participatory periodontology: 'the 5Ps age' has already started.**

EPMA J. 2013 Jun 14;4(1):16.

[Cafiero C](#), [Matarasso S](#).

An impressive progress in dentistry has been recorded in the last decades. In order to reconsider guidelines in dentistry, it is required to introduce new concepts of personalised patient treatments: the wave of predictive, preventive and personalised medicine is rapidly incoming in dentistry. Worldwide dentists have to make a big cultural effort in changing the actual 'reactive' therapeutic point of view, belonging to the last century, into a futuristic 'predictive' one. The first cause of tooth loss in industrialised world is periodontitis, a Gram-negative anaerobic infection whose pathogenesis is genetically determined and characterised by complex immune reactions. Chairside diagnostic tests based on saliva, gingival crevicular fluid and cell sampling are going to be routinely used by periodontists for a new approach to the diagnosis, monitoring, prognosis and management of periodontal patients. The futuristic '5Ps' (predictive, preventive, personalised and participatory periodontology) focuses on early integrated diagnosis (genetic, microbiology, host-derived biomarker detection) and on the active role of the patient in which networked patients will shift from being mere passengers to responsible drivers of their health. In this paper, we intend to propose five diagnostic levels (high-tech diagnostic tools, genetic susceptibility, bacterial infection, host response factors and tissue breakdown-derived products) to be evaluated with the intention to obtain a clear picture of the vulnerability of a single individual to periodontitis in order to organise patient stratification in different categories of risk. Lab-on-a-chip (LOC) technology may soon become an important part of efforts to improve worldwide periodontal health in developed nations as well as in the underserved communities, resource-poor areas and poor countries. The use of LOC devices for periodontal inspection will allow patients to be screened for periodontal diseases in settings other than the periodontist practice, such as at general practitioners, general dentists or dental hygienists. Personalised therapy tailored with respect to the particular medical reality of the specific stratified patient will be the ultimate target to be realised by the 5Ps approach. A long distance has to be covered to reach the above targets, but the pathway has already been clearly outlined.

### **Implant prosthetic rehabilitation with a free fibula flap and interpositional bone grafting after a mandibulectomy: A clinical report**

J Prosthet Dent. 2013 Jun;109(6):373-7. doi: 10.1016/S0022-3913(13)60321-2.

[Blanco MG](#), [Ostrosky MA](#).

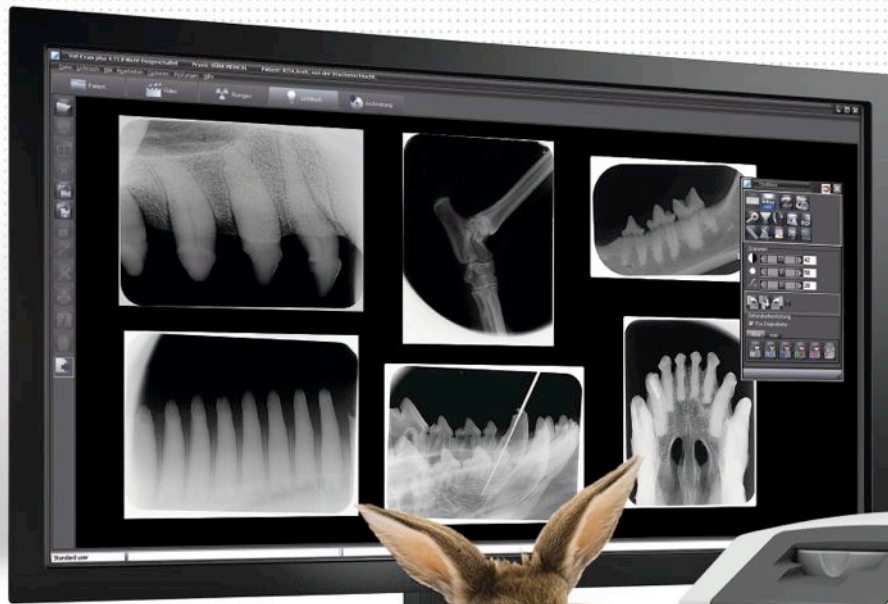
This clinical report describes the multidisciplinary treatment of a 16-year-old girl diagnosed with cemento-ossifying fibroma in the mandible. The resection of the lesion and reconstruction with a free osseous fibula flap with microvascular anastomosis was performed. Four months later, interpositional bone grafting of iliac spongy bone was used to gain bone height at the treated site. Twenty-four months later, 5 dental implants were placed. After a 6-month osseointegration period, a partial screw-retained fixed dental prosthesis was fabricated. Prosthodontic planning and treatment considerations are discussed.

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## Research

### In Vivo Assessment of Bone Healing following Piezotome® Ultrasonic Instrumentation

*Clin Implant Dent Relat Res.* 2013 Jun 13. [Epub ahead of print]

[Reside J](#), [Everett E](#), [Padilla R](#), [Arce R](#), [Miguez P](#), [Brodala N](#), [De Kok I](#), [Nares S](#).

**PURPOSE:** This pilot study evaluated the molecular, histologic, and radiographic healing of bone to instrumentation with piezoelectric or high speed rotary (R) devices over a 3-week healing period.

**MATERIAL AND METHODS:** Fourteen Sprague-Dawley rats (Charles River Laboratories International, Inc., Wilmington, MA, USA) underwent bilateral tibial osteotomies prepared in a randomized split-leg design using Piezotome® (P1) (Satelec Acteon, Merignac, France), Piezotome 2® (P2) (Satelec Acteon), High-speed R instrumentation, or sham surgery (S). At 1 week, an osteogenesis array was used to evaluate differences in gene expression while quantitative analysis assessed percentage bone fill (PBF) and bone mineral density (BMD) in the defect, peripheral, and distant regions at 3 weeks. Qualitative histologic evaluation of healing osteotomies was also performed at 3 weeks.

**RESULTS:** At 1 week, expression of 11 and 18 genes involved in bone healing was significantly ( $p < .05$ ) lower following P1 and P2 instrumentation, respectively, relative to S whereas 16 and 4 genes were lower relative to R. No differences in PBF or BMD were detected between groups within the osteotomy defect. However, significant differences in PBF ( $p = .020$ ) and BMD ( $p = .008$ ) were noted along the peripheral region between P2 and R groups, being R the group with the lowest values. Histologically, smooth osteotomy margins were present following instrumentation using P1 or P2 relative to R.

**CONCLUSIONS:** Piezoelectric instrumentation favors preservation of bone adjacent to osteotomies while variations in gene expression suggest differences in healing rates due to surgical modality. Bone instrumented by piezoelectric surgery appears less detrimental to bone healing than high-speed R device.

# Dental snapshot

# Illustrative Case Report

EVDS invites you to submit illustrative case reports to the **EVDSFORUM**.

Please, send it to [presidentelect@evds.org](mailto:presidentelect@evds.org)



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*J. Periodontology (2007) (2009)  
 J. Rheumatology (2002) (2004)*

—Dr. James Anthony, BSc(Agr), DVM,  
 MRCVS, FAVD, DAVDC, DEVDC, PAG

## Case report

### Fixation of a rostral mandibular fracture in a cat with a lingual arch bar

by S. Grundmann DVM Dipl. ECVS

Different techniques are described for the treatment of mandibular fractures in cats. For the repair dental occlusion is much more important than anatomic alignment. Biomechanically the fixation should be placed on the tension site of the fracture, which is close to the alveolar border of the mandible. In rostral located fractures there is insufficient space for placement of surgical implants because of the presence of the canine tooth roots. In those cases splinting with composite or acrylic resin reinforcement is the most common used technique which minimally compromises dental structures and surrounding soft tissues.

Çetinkaya et al. (2011) described the application of a lingual arch bar for rostral mandibular body fractures in cats. The fixation is located on the alveolar border on the lingual side of the mandible and is secured with circummandibular cerclage wires.



M. Haab, University of Zurich

Fig.1: Lingual arch bar technique

The patient, a 2 years old male European short hair cat showed a bilateral rostral fracture of the mandibular body just distal to the canine tooth roots and an additional maxillary fracture.

The cat was anaesthetized, pharyngotomy was performed for tracheal intubation to assess occlusion. After fixation of the maxillary fracture with a figure eight wire and composite reinforcement the cat was placed in dorsal recumbency. The ventral aspect of the mandible was clipped and aseptically prepared for surgery. The mandibular fracture was treated according to the technique described by Çetinkaya et al. (2011).

Kirschner's wire (1.2mm) was contoured to the lingual aspect of the mandible back to the 1<sup>st</sup> molar tooth. Cutted ends were bent to avoid soft tissue trauma.

Small stab incisions were made into the skin ventrally. Cerclage wire (0.6mm) was placed through the skin incision and advanced through a hypodermic needle into the oral cavity just close to the bone surface.

The wire was placed interproximal between the 4<sup>th</sup> premolar and 1<sup>st</sup> molar tooth, around the arch bar and guided ventrally along the bone surface with the hypodermic needle and twisted on the ventral aspect of the mandible.

Further wires were placed on the opposite site and interproximal between 3<sup>rd</sup> and 4<sup>th</sup> premolar in the same manner.

Rostrally a 0.5mm wire was placed from ventral in the same way around the arch bar then additional twisted around the canine teeth.

The reduction was held in place in occlusion and the wire ends were tightened (Fig.2), cut and bend down underneath the skin.

Skin incisions were closed with simple interrupted sutures.

Postoperative care included antibiotic treatment and pain release. The cat tolerated the fixation well and started eating 24 hours after surgery. X-ray control after 4 weeks showed the implants in place and beginning of bone healing.

Compared to oral splints the fixation does not interfere with occlusion. Mobile and missing teeth or periodontal disease do not limit the application. In our presented case the technique allowed restoration of occlusion, sufficient stabilization and minimal compromise of soft tissues and blood supply. Another advantage was the ease of application and the low costs of material. In our opinion the lingual arch bar is a good alternative for fixation of rostral located mandibular fractures in cats.

Literature:

Mehmet Alper Çetinkaya, DVM, MS, PhD, Cenk Yardimci, DVM, PhD, and Umit Kaya, DVM, PhD, Journal of Veterinary Surgery 40 (2011), pp 457-463



Fig.2: intraoperative situation during tightening the cerclage wire.



Fig.3: Postoperative x-ray (lateral view).



Fig.4: Postoperative x-ray (ventrodorsal view).



Fig.5: Postoperative x-ray (intraoral view).



Fig.6: Lateral view radiography 5 months postoperatively



Fig.5: Intraoral radiography 5 months after surgery after implant removal

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# 22<sup>nd</sup> European Congress of Veterinary Dentistry Prague | Czech Republic



Lunch area



Dancing during the gala dinner



Overview of the main auditorium



Opening session with Gottfried Morgenegg



Exhibitor area 1



Exhibitor area 2

## 22<sup>nd</sup> European Congress of Veterinary Dentistry Prague | Czech Republic



Practical sessions at the faculty.



From left to right: Jan Schreyer, Ines Ott, Vladimír Jekl, Gottfried Morgenegg, Peter Hasseler, Lisa Mestrinho, François Debette, Katerina Slaba, Tomas Fichtel, Vladena Strosova, Zbynek Lonsky, Rudolf Mac

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# 22<sup>st</sup> European Congress of Veterinary Dentistry Prague | Czech Republic

## Case report: 204 Embedded

Ignacio Velázquez Urgel  
DVM

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ODONTOVET, Dentistry and Maxillofacial surgery service  
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### INTRODUCTION

Tooth's eruption, deciduous or definitive, can be interrupted due to impaction or the tooth being embedded. While in the first case eruption is a result of physical obstruction, in the second one it is caused by the lack of forces of eruption. In both cases the risk of dentigerous cysts development, with cervical dental origin, makes the surgical tooth extraction advisable.



Fig 1: Pluto



Fig 2: Oblique extra oral X-ray image



Fig 3: Intra oral aspect

### MATERIALS AND METHODS

#### Protocol

When a patient lacks a tooth or more (Fig.3), I recommend radiographic study accomplishment to detect the possible impaction (Fig.2). The presented case is one year old neutered mixed breed dog (Fig 1) without left maxillary canine (204) eruption. After presence of 204 was noticed, surgical exodontia was proposed. We performed full blood sample and coagulation time tests (PT and aPTT) and the results showed the values were within the range of normality.

#### Anesthesia and preparation

We shaved the cephalic vein area and we placed an endo venous catheter 20G (a). We pre-medicated the dog with Diazepam (b), Fentanyl (c), Meloxicam (d) and Ampicillin (e) The anesthetic induction was realized with Propofol (f). We used number 8 endo tracheal tube for 100 % oxygen with Isoflurane (g) 1% administration during the intra oral X-ray pictures and surgery. During the anesthesia we transfused Lactate Ringer's solution (h) using an infusion pump. I blocked maxillary nerve inoculating Lidocaine 2 %-Epinephrine (i) in the Pterigopalatina left fossae. Finally, I performed an intra oral X-Ray and marked the area with a hypodermic needle (Fig.4 and 5).

#### Surgical technique

I made a muco gingival flap between 204 and 206, and then I exposed the maxillary bone. The gingival cut was made avoiding free gingiva. I removed maxillary bone that covered 204 with number 29 diamond ball bur connected to a turbine with refrigeration (Fig.9). 204 was luxated with a luxator (j). During the maneuver the mesial fragment fractured (Fig.6 and 10); I removed the fragment immediately after the intra oral X-ray picture. Once verified that it was completely removed (Fig. 7 and 8), I sutured the flap with a monofilar absorbable 4/0 non-traumatic needle suture (k), using an interrupted simple pattern leaving 2-3 mm between sutures (Fig.11)



Fig. 4 y 5: 204 Intra oral X-ray pictures

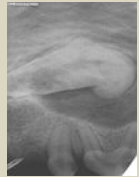


Fig. 6: 204 Fragment



Fig 7 y 8: Post exodontia intra oral X-ray pictures.

### Post surgery

After the surgery, I prescribed antibiotic treatment with Amoxicillin + Clavulanic Acid (l) and analgesic treatment with Firocoxib (m). Topic anti septic Chlorhexidin solution was also recommended. (n)



Fig 9: 204 showed after maxillary bone removal



Fig 10: 204



Fig 11: Muco gingival flap sutured.



Fig 12: 43 days after surgery.

### RESULTS

The animal showed very good post-surgery response without signs of pain. After 10 days, at the follow-up consultation, I verified good gingival cicatrization. After 43 days, there were no sutures left (Fig 12).

### DISCUSSION

Embedded teeth are often diagnosed after radiographic exploration of the area or after detection of a dentigerous cyst. Factors of this pathology are inadequate direction of eruption, gingival or alveolar bone resistant to the dental eruption, cysts or dentigerous tumors and hypoplasia of the dentin or enamel. The concept "dentigerous cyst" refers to the radio lucid image originated on the tooth's neck of the embedded teeth. The symptoms of this case could be related to enamel hypoplasia, because of the existence of enamel resorption and diacerated root; it could be the cause of lack of eruption. I noticed crown defects after examining the extracted tooth. Intra oral X-ray picture (Fig.5) reveals this.

### CONCLUSION

When patients lack some teeth, it is imperative to set an intra-oral radiographic study for possibility of non-eruption. In the case of an embedded tooth, especially if the tooth has signs of resorption or dentin or enamel hypoplasia, the tooth should be extracted.

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\*Susceptible strains include *Staphylococcus intermedius*, *Escherichia coli*, *Porphyromonas* spp., and *Prevotella* spp.

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**Contraindications:** Do not use in animals with known hypersensitivity to fluoroquinolones.

**Dogs:** Do not use in dogs during the period of growth as developing articular cartilage may be affected. The period of growth depends on the breed. For the majority of breeds, pradofloxacin-containing veterinary medicinal products must not be used in dogs of less than 12 months of age and in giant breeds less than 18 months. Do not use in dogs with persisting articular cartilage lesions, since lesions may worsen during treatment with fluoroquinolones. Do not use in dogs with central nervous system (CNS) disorders, such as epilepsy, as fluoroquinolones could possibly cause seizures in predisposed animals. Do not use in dogs during pregnancy and lactation. **Cats:** Due to the lack of data, pradofloxacin should not be used in kittens aged less than 6 weeks. Pradofloxacin has no effects on the developing cartilage of kittens of 6 weeks of age and older. However, the product should not be used in cats with persisting articular cartilage lesions, as these lesions may worsen during treatment with fluoroquinolones. Do not use in cats with central nervous system (CNS) disorders, such as epilepsy, as fluoroquinolones could potentially cause seizures in predisposed animals. Do not use in cats during pregnancy and lactation. **Adverse reactions:** Mild transient gastro-intestinal disturbances including vomiting have been observed in rare cases in dogs and cats.

**Veraflox 25 mg/ml oral suspension for cats**

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For information on Special warnings for each target species, Special precautions for use, Adverse reactions and Interaction with other medicinal products and other forms of interaction see the published SPC.

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## 22<sup>st</sup> European Congress of Veterinary Dentistry Prague | Czech Republic

### Partial zygomatic and coronoid osteotomy for treatment for jaw locking in a 8 year old dog

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#### Case presentation

An 8-year-old, 41.5kg, female Saint Bernard dog was evaluated for closed-mouth jaw locking. Six years before there was a diagnosis of masticatory muscle myositis but the owners reported a face trauma due to a dog bite. Clinical examination revealed cachexia, a range of jaw opening of 4 mm and normal occlusion. The animal was able to eat soft food due to a gap on the right side whereas it was possible to grasp food with the tongue. Computed tomography examination revealed right coronoid/zygomatic arch synostosis. Surgery included access over the zygomatic arch, myotomy and elevation of the temporalis and masseter muscle. Zygomatic arch and coronoid process were then exposed and were identified the following anatomical points according to CT analysis: rostral and caudal end of the zygomatic arch and ventral part of the coronoid fossa. A complete osteotomy of the synostosis portion was performed using an oscillating saw. Osteotomy of the bony callus resulted in immediate opening of the mouth with range of motion of 7 cm. Gap was filled using a collagen sponge. Surgical wound was closed in a routine manner leaving a Penrose drain for 72h. Post-operative pain control included fentanyl patch and meloxicam for one week. Rehabilitation program included daily forced mouth opening and feeding soft food every 2 hours for a week. Afterwards start with hard food. One week after surgery, the animal showed normal occlusion and adequate function with voluntary masticatory movements of the mandible. There were no signs of pain or friction by forcing complete opening of the jaw. Six months after surgery the dog was completely recovered.

#### Discussion

Temporo-Mandibular Joint (TMJ) ankylosis is caused by extra-articular lesions, which lead to a reduced range of motion and inability to open the mouth (Miller *et al.*, 1975). In a 37 case study, 90% were in fact false ankylosis and 65% of these cases were caused by traumatic injuries (Gatineau *et al.*, 2008). This case resulted from an abnormal extra-articular bony callus secondary to a trauma. This synostosis was visible on ventro-dorsal radiography, which agrees with previous literature (Gatineau *et al.* 2008). However, CT shows increase sensitivity when compared with radiography (Perrella *et al.*, 2007). Three-dimensional reconstruction obtained from CT images allowed a better surgery planning with identification of key anatomy points. In Humans treatment includes release/resection of the bony mass and release TMJ of all restrictive forces (Roychoudhury *et al.*, 1999). In veterinary medicine reports of this procedure are scarce. Surgery is directed towards re-establishment of normal joint range of motion. This includes excision of the abnormal callus and partial osteotomy of the involved bones. In this case zygomatic arch and coronoid process were involved in the bony callus.

Early rehabilitation after TMJ surgery is advised by feeding small amounts of food various times a day and encouraging jaw motion by manual maneuvers or playing with toys (Maas and Theysse, 2007). In the present case, the dog was daily forced to open his mouth and it was feed with soft food every 2 hours for a week.

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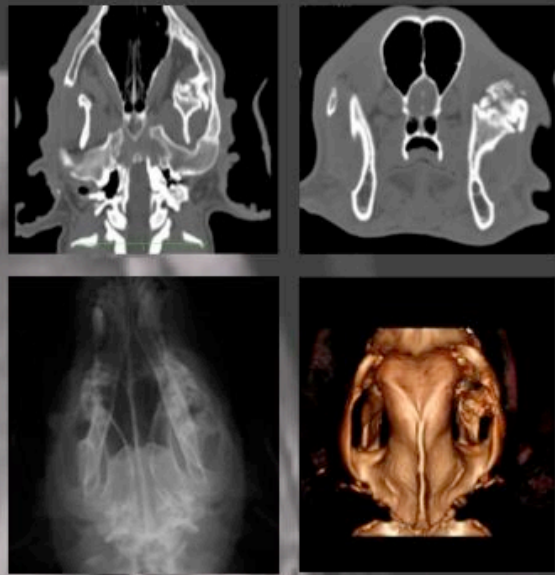


Fig. 1 – Radiography and tomography studies. It is possible to identify coronoid-zygomatic synostosis.



Fig. 2 – Intra-operative photographs, pre- and post-operative jaw opening, and post-operative radiography.



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### The value of the e-VDS

- *Veterinarian:*
  - Individual clinic scoring sheet with his own logo and header
  - The clinical findings are scored on dental charts (by David Crossley)
  - Basic findings are documented and can be used as history
  - A tool to increase customer loyalty and compliance for oral care
- *Owner:*
  - The owner is involved in the process
  - Printout with the assessment of his pet
  - A legend explaining the findings of the scoring
  - Provides a chance to follow the development of a treatment or prophylaxis
  - Encourages follow-up

I	M	F	P	E						
										101 (I1)
										102 (I2)
					X					103 (I3)
2										104 (C)
										105 (P1)
										106 (P2)
										107 (P3)
3										108 (P4)
										109 (M1)
										110 (M2)
<b>Right</b>										
										411 (M3)
										410 (M2)
										409 (M1)
	X									408 (P4)
										407 (P3)
										406 (P2)
										405 (P1)
										404 (C)
										403 (I3)
										402 (I2)
										401 (I1)

### Dental assessment

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	I	M	F	P	E					
										201 (I1)
										202 (I2)
										203 (I3)
										204 (C)
										205 (P1)
										206 (P2)
										207 (P3)
										208 (P4)
										209 (M1)
										210 (M2)
<b>Left</b>										
										311 (M3)
										310 (M2)
										309 (M1)
										308 (P4)
										307 (P3)
										306 (P2)
										305 (P1)
										304 (C)
										303 (I3)
										302 (I2)
										301 (I1)

### Legend

- I █ Inflammation index (0-3)
- M  Missing tooth
- F  Fractured tooth
- P  Persistent milk tooth
- E  Extraction

**Occlusion: Prognathism**

**Calculus level: 0**

**General Notes:**

Notes:

**Tutorial:**

- The programme is linked with a brief tutorial to support the general practitioner:
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  - Based on photographs
  - Brief compact information (diagnosis, aetiology, differential diagnosis, treatment options)
  - Providing information to help obtain a solution

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## Report of the 22<sup>nd</sup> European Congress of Veterinary Dentistry and the 12<sup>th</sup> World Veterinary Dental Congress

The 22<sup>nd</sup> European Congress of Veterinary Dentistry (ECVD) was held together with the 12<sup>th</sup> World Veterinary Dental Congress (WVDC) in the Clarion Congress Hotel in Prague, Czech Republic, from May 23<sup>rd</sup> to May 26<sup>th</sup> 2013. The event was organised by the [European Veterinary Dental Society](#) (EVDS) together with the [European Veterinary Dental College](#) (EVDC) and very importantly the local organising committee (LOC) of Czech Republic. It was the first combined congress of ECVD and WVDC and the largest congress yet, attended by 405 delegates from 34 countries from all continents and personnel of 48 sponsors.

The Congress commenced on Thursday in the traditional manner with the EVDC Training Day organised by the European Veterinary Dental College at the Czech University of Life Sciences in Prague. These training sessions would not be possible without the extremely generous support of our equipment sponsors: Accesia, Acteon, Aribex, Duerr Medical and Kruuse. There was one full day course that covered “Surgical Extractions” and six half-day courses that covered “Access for veterinary endodontics”, “Pulpotomy and restorative techniques”, “Palate Surgery” and “Surgical Anatomy”. Two sessions on “Rabbit Dentistry” were organized, for the first time, by a cooperation of the European Veterinary Dental College and the European College of Zoological Medicine. Specialists from both colleges tutored “rabbit” workshops and gave the participants greater insight into rabbit dentistry.

For the second time a course “Introduction to Dentistry” was presented on Sunday, mainly for recent graduates and students. An advanced session on “Equine Dentistry” was also presented on Sunday. All of these were tutored by Diplomates of the EVDC, AVDC and other specialists in the dental and oral field. Thanks to Horse Dental Equipment for sponsoring this event through the supply of equipment and Pegasos Foundation for a demonstration of minimally invasive buccotomy approach to extraction.

On Thursday evening the welcome reception and the opening of the congress were held at the congress venue, the Clarion Congress Hotel. It was well attended and opened by Gottfried Morgenegg (President EVDS) and Tomas Fichtel (President of Czech Veterinary Dental Society (CVDS)). Cedric Tutt, President of EVDC, welcomed the delegates on behalf of the EVDC. Drinks and food were served.

This year there were four parallel streams on both days of the congress. There were lectures in: restorative dentistry, feline dentistry, dentistry in rabbits and rodents, endodontics, basic dentistry, oncology, oral surgery, periodontology and equine dentistry. A full day stream in periodontology was sponsored by Waltham. An interactive lecture on radiographic interpretation and a “test your knowledge” session was provided by the EVDC.

In all, 96 presentations were given during the two days of the main congress with 50 speakers coming from 17 countries all over the world. This year there were seven posters which were well attended by the delegates.

On Friday, after the end of the lectures and the AGM of EVDS, the other tradition of the ECVD, the Gala Dinner, took place at the Municipal House Smetana Hall. Its facade is eye-catching not only due to its monumental architectural composition but also because of the unique profile created by its collection of the sculptural art of the time. Music for the ears came from a choir and solo songs by our colleague Katerina Slaba. Later on live music animated delegates to dance. The EVDS President, Gottfried Morgenegg, gave a short speech and the EVDC President, Cedric Tutt, announced the new EVDC Diplomates, Ana Nemeč and Florian Boutoille. The dinner was partly and kindly sponsored by Hill's and Duerr Medical.

The EVDS presented the e-VDS – electronic Veterinary Dental Scoring at the congress. It is a scoring tool for general practitioners' daily work which scores only the most important issues and allows the creation of an assessment within five minutes. The printout can be used as a tool for communication with the client. It is a free service available on the EVDS website.

The EVDS is grateful to the sponsors who not only provided an excellent commercial exhibition, but also whose generosity made such a congress possible: Diamond sponsor: Hill's; Long Term Partner: Royal Canin; Gold sponsors: Bayer, Duerr Medical; Major sponsors: Accesia, Healthymouth, Kruise/IM3, Virbac and Zoetis. Local sponsors in alphabetical order were Acteon/Satelec, Aribex/Nomad, Biovendor, Bioveta, Buccosante, Columbia Dental, Curaprox, Cymedica, Dacross Services, Dentalvet, Elite science Vet, Equus Dental Harmony, European Equine Dental Consultancy, Henry Schein, Horse Dental Equipment, IDEXX Laboratories, K9-Implants, Mars/Waltham, Medin, Medicus Veterinarius, Meditools, Merial, Midmark, MXR, Orion Pharma, Pegasos 4D, Pedigree, PlaqueOff, Profi Press, Resorba, Samohyl, Shipp's Dental & Specialty Products, SMRCEK Z-CON, Spofa Dental, Swiss Premiun Dental Care, Vetup, VIN and Waltham.

This year, once again, the congress attendance of 20 young graduates was sponsored by Royal Canin. Last but not least we want to thank the local organising team for their great work making the congress such a success.

We are happy to be able to announce the next congress, our 23<sup>rd</sup> European Congress of Veterinary Dentistry, which will be held on a cruise ship starting from Marseille, 6th-10th May 2014, where you can combine education with leisure. Please have a look at our new website [www.evds.org](http://www.evds.org). Full details will be available soon.

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