



## CASE REPORT

### Incisor malocclusions in a rabbit

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#### Özet

**Altan S, Gökşahin E.** Bir tavşanın ön kesici dişlerinde görülen maloklüzyon olgusu. *Eurasian J Vet Sci*, 2011, 27, 2, 135-138

Tavşanlar, pet hayvanlar arasında en çok beslenen hayvanlardan biri olmasına rağmen sahipleri tarafından düzgün bir beslenme rejimi uygulanmaz. Bu durum dişlerin sürekli büyümesiyle orantılı olarak özellikle dişlerde hastalıklara neden olabilir. İştahsızlık şikayeti ile Cerrahi kliniğe getirilen erişkin bir Yeni Zelanda tavşanında yapılan ağız muayenesi ve çift yönlü radyografi neticesinde alt ve üst kesici dişlerde maloklüzyonlar saptandı. Yapılan hemosel, kan gazı ve bazı serum biyokimyasal analizlerde hematokrit, hemoglobin ve kalsiyum seviyelerindeki düşüklük dışındaki değerler referans aralığında ölçüldü. Sonuç olarak, tavşanlar, dental problemler yönünden veteriner hekimler tarafından rutin olarak muayene edilmesi gerekir.

#### Abstract

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Rabbits are the most popular pet animal, but rabbits are generally be fed with inappropriate diet. This may cause especially dental disease because all teeth are consistently growing. Anorexic adult male New Zealand white rabbit was presented to surgery clinic. Oral examination and lateral and dorsoventral radiography were made. Blood cell counts, blood gas and some serum biochemical values were determined. Upper and lower incisor malocclusions were observed. Blood cell counts, blood gas and some serum biochemical parameters were generally within reference range or values of healthy rabbits except low paced cell volume, haemoglobin and calcium level. As a result, rabbits should be routinely examined for dental diseases by veterinarians.

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Rabbits may be the most preferred pets and scientific researches animals because they are quiet, docile, gentle and infrequently bite. However clinical signs of disease in rabbits do not observed till severity of illness (Richardson 2000, Altunok et al 2002, Merdith and Crossley 2002, Huerkamp 2003, Fraser 2004, Yazar 2010). Diet is very important for healthy of rodents, but, in generally, they are feed inappropriate diet. Dental disease of rabbits may be depend on hereditary or dietary deficiencies (Girling 2003, Huerkamp 2003, Fraser 2004). Dental formula of rabbit is I 2/1, C 0/0, P 3/2, M 3/3. Rabbit teeth are consistently growing and incisors teeth may grow 10-12.5 cm in a year (Richardson 2000, Girling 2003, Fraser 2004). If rabbits do not eat suitable diet, their teeth may be overgrown. For this reason, they should be regularly gone to veterinarian for oral examination. The aim of this case was shown clinical, radiographic and laboratory findings of New Zealand white rabbit with incisor malocclusion.

An anorexic adult male New Zealand white rabbit (3.8 kg, 18 months) was presented with incisor den-

tal malocclusion. Oral examination was made under sedation. Lateral and dorsoventral radiography were taken, as well. Blood sample was taken from *A. auricularis*. White blood cell (WBC), red blood cell (RBC) and platelet (PLT) counts were determined with haemocell counts (Medonic-Biobak, Sweden). Blood pH,  $pCO_2$ ,  $pO_2$ ,  $HCO_3^-$ ,  $SO_2c$ ,  $tCO_2$ , packed cell volume (PCV), haemoglobin (Hbc) and calcium ( $Ca^{++}$ ) levels were determined with blood gas analyzer (GenPremier 3000). Serum albumin, alkaline phosphatase, alanine aminotransferase, amylase, aspartate aminotransferase, cholesterol, creatine kinase-MB, creatinine, gamma glutamyl transferase, high density lipoprotein, lactate dehydrogenase, total protein, triglyceride, blood urea nitrogen, glucose, lactic acid levels were measured with autoanalyzer (Tokyo Boeki Prestige 24i, Japan). Incisor malocclusions were extracted with dog nail trimmer under general anesthesia. Radiograph of rabbit with incisor malocclusion (Fig 1 A and B) and clinical sign (Fig 1 C) are shown in Figure 1. It was observed that upper incisors whorl into oral cavity, while lower incisors grown in a dorsofacial way. WBC, RBC and PLT counts were  $4.7 \times 10^3/mm^3$ ,  $6.31 \times 10^6/$

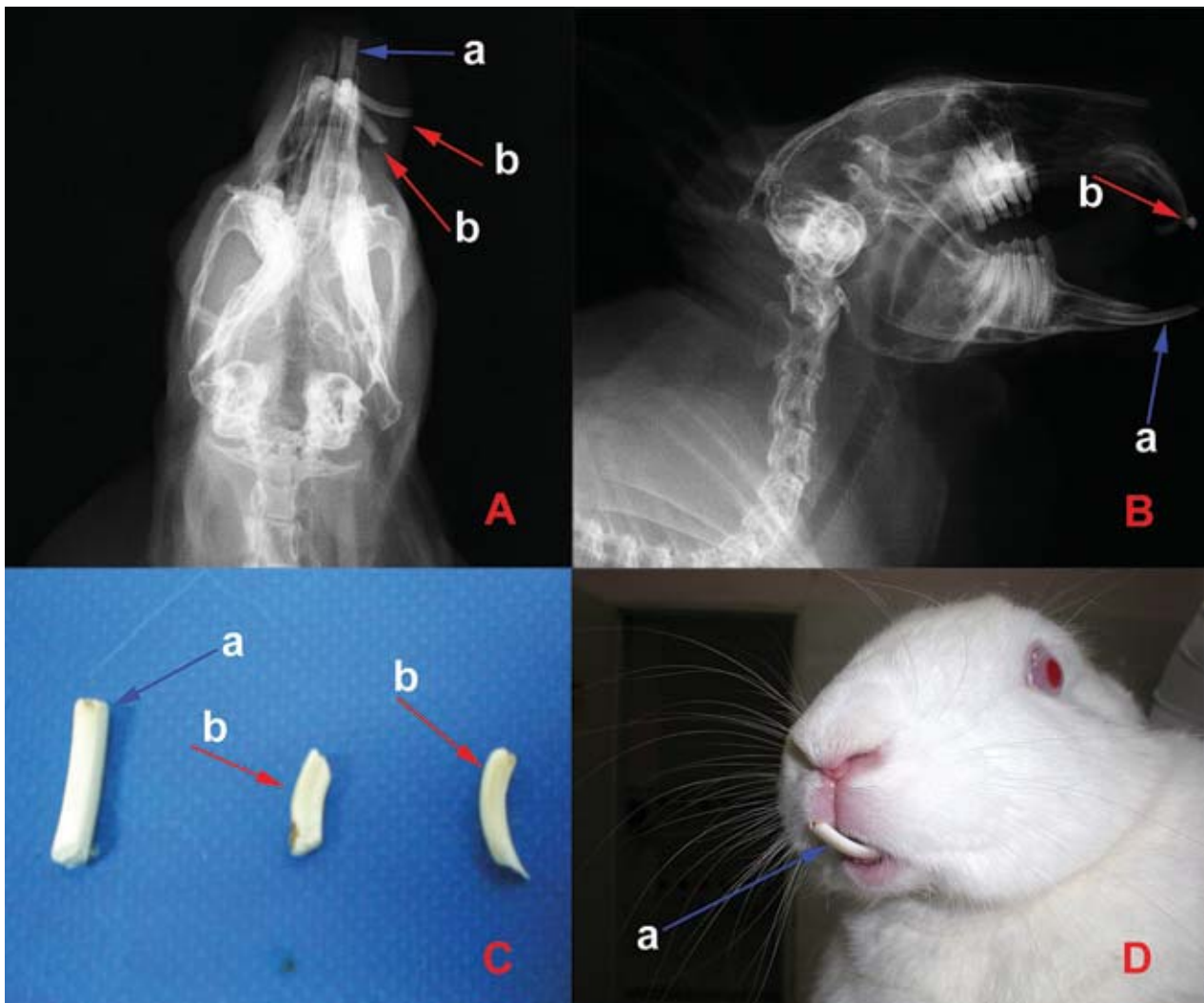


Figure 1. Incisor malocclusion in a rabbit (A; dorsoventral radiography, B; Lateral radiography, C; Extracted teeth, D; Clinical visual), a; Lower incisor malocclusion, b; Upper incisor malocclusion).

mm<sup>3</sup> and 360 x10<sup>3</sup>/mm<sup>3</sup>, respectively. Blood pH, pCO<sub>2</sub>, pO<sub>2</sub>, HCO<sub>3</sub><sup>-</sup>, SO<sub>2</sub>c, tCO<sub>2</sub>, PCV, Hbc and Ca<sup>+2</sup> levels were 7.49, 19 mmHg, 151 mmHg, 14.5 mmol/L, 99%, 15.1 mmol/L, 21%, 6.5 mg/dL and 0.22 mmol/L, respectively. Serum albumin, alkaline phosphatase, alanine aminotransferase, amylase, aspartate aminotransferase, cholesterol, creatine kinase-MB, creatinine, gamma glutamyl transferase, high density lipoprotein, lactate dehydrogenase, total protein, triglyceride, blood urea nitrogen, glucose, lactic acid levels were 3.2 g/dL, 14 U/L, 22 U/L, 183 U/L, 13 U/L, 140 mg/dL, 865 U/L, 1.39 mg/dL, 7 U/L, 24 mg/dL, 118 U/L, 5.1 g/dL, 150 mg/dL, 36 mg/dL, 85 mg/dL, 1.4 mmol/L, respectively.

It has been reported that incisor malocclusion is the most widespread dental problem in the rabbits, and anorexia frequently comes with malocclusion (Legendre 2002, Huerkamp 2003). There was no observed any other oral pathologic conditions in this case (Figure 1), after visual examination, lateral and dorso-ventral radiographies were taken. It was determined that upper incisors whorl into oral cavity, while lower incisors grown in a dorsofacial way. This findings are accepted typically observation in the incisor malocclusion (Girling 2003, Harcourt-Brown 2007).

Haemocell counts, blood gase and serum biochemical values were generally within reference range or values of healthy rabbits (Richardson 2000, Altunok et al 2002, Hernandez-divers 2004, Yazar et al 2004, Elmas et al 2006). However, low PCV, Hbc and calcium level was determined in New Zealand white rabbit. It has been reported that calcium and vitamin D deficiency may play role in the development of malocclusion (Richardson 2000). Low PCV and Hbc levels may be derived from inadequate feeding. Incisor malocclusions were extracted with dog nail trimmer. This device may be used in acute and short-term solution. After the extracted of incisor teeth (Figure 1-C), no need any supportive therapy because incisor malocclusion seldom causes the critical conditions.

As a result, rabbits should be routinely examined to evaluate oral pathology by veterinarian and balanced diet should be given.

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