

**INCIDENCE OF EPULIDES IN THE DOG – A
RETROSPECTIVE HISTOPATHOLOGICAL STUDY***
*UČESTALOST EPULIDA KOD PASA – RETROSPEKTIVNA
HISTOPATOLOŠKA ISTRAŽIVANJA*

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The retrospective histopathological study of 468 samples of tumour material obtained from dogs, referred to the Faculty of Veterinary Medicine, Trakia University, Stara Zagora during the period 1991-2000 showed that 29 specimens (6.19%) were epulides.

According to their histogenesis, the lesions were classified in two primary groups: reactive lesions – 37.94% and peripheral odontogenic tumours – 62.06%. Epulides were most commonly encountered in males (68.96%) compared to females (31.04%). The average age of affected dogs was 4 years for both genders. In 18 cases (62.06%), the lesions were mandibular whereas in 11 (37.94%) – maxillar. The highest predilection to epulides was observed in German Shepherds – 27.58%.

Key words: dogs, epulides, incidence

Introduction / Uvod

Epulides are among the most frequently encountered oral pathological lesions in the dog [1, 9, 11]. The term epulis means a non-specific growth of the gingiva. This is a clinical term that participates in diagnoses only accompanied by an adjective – for instance, giant cell epulis, acantomatous epulis etc. [5]. The same author divides epulides into two principal classes: reactive lesions and peripheral odontogenic tumours. The first group includes the fibrous epulis, the pyogenic granuloma, the giant cell epulis and reactive exostoses. The second group of neoplasms comprises the fibromatous epulis (odontogenic fibroma), the acantomatous epulis and the calcifying epithelial odontogenic tumour [4]. In some studies, the reactive lesions are said to be predominant while in others – odonto-

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genic tumours are reported to be more prevalent [3, 1, 11, 12]. The reports by some authors show a higher incidence of epulides originating from the maxillar gingiva whereas those of others – from the mandibula [3, 7, 12]. The average age with the highest risk of the onset of epulides is between 6 and 8-9 years [6, 11]. In a study on 189 dogs with epulides, Toshida et al. (1999) observed a higher predisposition in Scotland Shepherds and Tzvetkov [11] – in German Shepherds. Other authors have not observed any breed-related predisposition [3, 9]. Neoplasms are more commonly encountered in male dogs [11, 12].

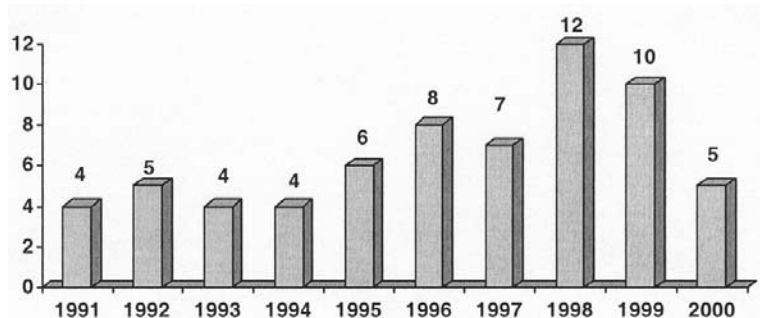
The histogenesis, the development and the prognosis of epulides could be most commonly determined using morphological criteria [13]. The aim of the present study was to determine the type of lesions, clinically determined as epulides via histopathological methods as well as their incidence depending on the breed, gender and age of the host with regard to the application of results as prognostic criteria in the diagnostics of tumours.

Material and methods / Materijal i metode rada

The studies were performed within the period 1991-2000 at the Faculty of Veterinary Medicine, Trakia University – Stara Zagora. A total of 468 samples from spontaneous tumour growths were obtained by excision or biopsy. Specimens for the histological study were fixed in 10% neutral formaldehyde and processed using the routine histological technique. Cross-sections were stained with haematoxylin/eosin (H/E).

Results / Rezultati ispitivanja

From all 468 samples, 65* (13.88%) originated from the oropharyngeal region. Twenty-nine (44.61%) of them or 6.19% of the total number of tumours



Graph 1. Incidence fo oral neoplasms in the dog for the period 1991-2000.
Grafikon 1. Pojava oralnih neoplazmi kod pasa u periodu od 1991 do 2000. godine

* The cases of oral papillomatosis are not included because of the specifics of its etiology.

were determined as epulides. In eighteen cases (62.06%) the lesions were localized to the mandibular and in eleven (37.94%) – to the maxillar gingiva.

Table 1 presents the incidence of epulides depending on the breed, gender and age of hosts. The highest percentage of affected dogs was that of German Shepherds – 27.58%. Then followed Collies, Irish Setters (13.8% each) and Bologneses, Boxers and mixed-breed animals (10.34% each). The incidence of epulides in Dogues (6.9%), Dachshunds and Drathaars (3.44%), that are among the commonly encountered breeds in our country, was relatively low.

Table 1. Incidence of epulides in the dog depending on the breed, gender and age of the host /

Tabela 1. Pojava epulida kod pasa u zavisnosti od rase, roda i starosti domaćina

Breed / <i>Rasa</i>	Average age, yrs / <i>Prosečna starost, god.</i>	Gender / <i>Rod</i>				Total / <i>Ukupno</i>	
		Male / <i>ženski</i>		Female / <i>muški</i>		n	%
		n	%	n	%		
1. German Shepherd / <i>Nemački ovčar</i>	4.5	5	17.24	3	10.34	8	27.58
2. Collie / <i>Koli</i>	5	4	13.80	–	–	4	13.80
3. Irish Setter / <i>Irski seter</i>	6.5	2	6.90	2	6.90	4	13.80
4. Boxer / <i>Bokser</i>	3	2	6.90	1	3.44	3	10.34
5. Dogue / <i>Doga</i>	6	2	6.90	–	–	2	6.90
6. Bolognese / <i>Bolonezer</i>	4.5	2	6.90	1	3.44	3	10.34
7. Dachshund / <i>Daksund</i>	2	–	–	1	3.44	1	3.44
8. Drathaar / <i>Dratar</i>	1	1	3.44	–	–	1	3.44
9. Mixed-breed / <i>Mešanac</i>	3.5	2	6.90	1	3.44	3	10.34
Total / <i>Ukupno</i>	4	20	68.96	9	31.04	29	100

Epulides were more frequent among male dogs – 68.96% vs 31.04% in females. The average age of affected dogs in both genders was 4 years.

Macroscopically, the lesions appeared as irregular masses with a diameter from 1-2 to 8-10 cm in all cases. The cutting surface was thick. In some cases, the surface was ulcerated.

Table 2. Incidence of epulides in the dog depending on the histological diagnosis /
Tabela 2. Pojava epulida kod pasa u zavisnosti od histološke dijagnoze

Epulides / Epulide					
Reactive lesions / <i>Reaktivne lezije</i>	n	%	Peripheral odontogenic tumours / <i>Periferni odontogeni tumori</i>	n	%
Fibrous epulis / <i>Fibrozni epulis</i>	4	13.8	Fibromatous epulis (odontogenic fibroma) / <i>Fibromatozni epulis</i> (odontogeni fibrom)	8	27.58
Giant cell epulis / <i>Epulis džinovskih ćelija</i>	6	20.7			
Pyogenic granuloma / <i>Pirogeni granulom</i>	1	3.44	Acantomatous epulis / <i>Akantomatozni epulis</i>	10	34.48
Total / <i>Ukupno</i>	11	37.94	Total / <i>Ukupno</i>	18	62.06

The incidence of epulides depending on the histological diagnosis is shown in Table 2. Lesions determined as peripheral odontogenic tumours were prevalent (62.06%) whereas those determined as reactive lesions were less present 37.94%. The parenchyma of the most commonly encountered tumour – the acantomatous epulis, consisted of islets and bands of epithelial cells, embedded by a connective tissue stroma. The basal cells of the parenchyma were with a palisade-like arrangement, sometimes with a vacuolated cytoplasm. An inverse polarity was also observed (Fig. 1).

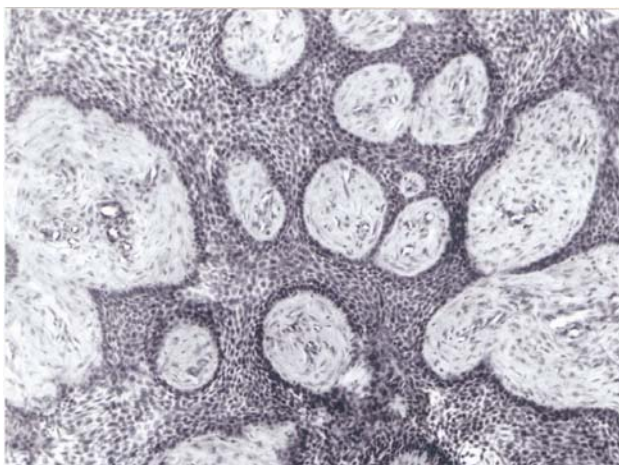


Figure 1. Acantomatous epulis in a 4-year-old Boxer. H/E, × 300
Slika 1. Akantomatozni epulis kod četvorogodišnjeg boksera. H/E, x 300

The structure of odontogenic tumours with the next frequency (in descending order) – fibromatous epulides (odontogenic fibromas) was from a primary cellular type. The parenchyma consisted of fibroblast cells and remnants of

odontogenic epithelium and was characterized with a high degree of vacuolization (Fig. 2).

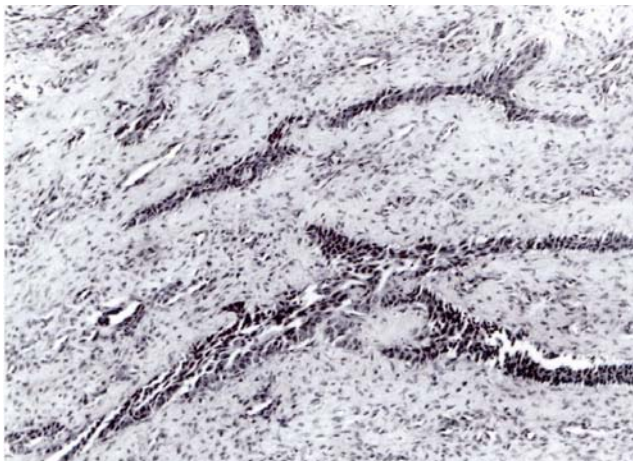


Figure 2. *Fibromatous epulis in a 6-year-old German Shepherd, H/E, × 240*
Slika 2. Fibromatozni epulis kod šestogodišnjeg nemačkog ovčara. H/E, x 240

Reactive lesions were determined according to the respective histological features. The parenchyma of the most widespread type, that of the giant cell epulis, consisted of intensely vacuolated fibroblast tissue with multinuclear giant cells within. The parenchyma of the other lesions from this group – fibrous epulis and pyogenic granuloma, showed a focal fibrous hyperplasia in the former and a marked granulation tissue with endothelial proliferation in the latter type, respectively.

Discussion / Diskusija

The results of our studies confirmed the high incidence of epulides among oral pathological lesions in dogs [1, 4, 12, 8]. Nearly half of the oral tumour growths, we observed during the period of the study, were from this neoplastic type (44.61%) [14]. In this respect, our results are similar to those of authors supporting the thesis that epulides are among the commonest oral neoplasms [15, 11]. The highest prevalence of epulides in German Shepherds, observed by us, is comparable to the incidence reported by Tzvetkov [11]. Probably, this frequency is due to the wide-ranging distribution of this breed in the region [7, 12].

Our studies evidenced that the average age of the onset of epulides was 4 years. During the last decade, there is a tendency towards the appearance of tumour formations in a younger age compared to other periods [1, 10, 6, 7].

The prevalence of epulides among male individuals is similar to that, stated by others [7, 11, 12]. As to the localization (on the maxillar or the mandibular gingiva), we could hardly establish any predisposition because of the contradictory data [3, 6, 7, 2, 12].

The results of our histopathological studies, according to the criteria of Gardner [5], evidenced a dominating prevalence of peripheral odontogenic tumours (acantomatous and fibromatous epulis) – 62.06% vs the reactive lesions (fibrous epulis, giant cell epulis and pyogenic granuloma) – 37.94%. These data correlated with the data of Reichart et al. [9], Hoffman and Gaengler, [7]; Yoshida et al., [12] but not with those reported by Tzvetkov [11] who affirmed that giant cell epulides were the commonest.

The analysis of our results confirmed the primary importance of histological investigation for the confirmation of the diagnosis and for the prognosis of lesions, determined as epulides.

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UČESTALOST EPULIDA KOD PASA – RETROSPEKTIVNA HISTOPATOLOŠKA ISPITIVANJA

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Retrospektivna histopatološka ispitivanja urađena su na 468 uzoraka materijala tumora dobijenih od pasa, predatih Fakultetu veterinarske medicine Univerziteta u Trakiji, Stara Zagora, u perioda od 1991 do 2000, i dobijeni rezultati su ukazali na epulide u 29 uzoraka (6,19%).

Prema svojoj histogenezi, lezije su podeljene u dve osnovne grupe : reaktivne lezije – 37,94%, i periferni odontogeni tumori – 62,06 posto. Epulide su najčešće ustanovljene kod mužjaka (68,96%) u poređenju sa ženkama (31,04%). Prosečna starost zaraženih pasa bila je 4 godine, za oba pola. U 18 slučajeva (62,06%), lezije su bile na mandibuli, dok su u 11 slučajeva (37,94%) one bile na maksili. Najjača sklonost ka epulidama uočena je kod nemačkih ovčara – 27,58 posto.

Ključne reči: psi, epulide, učestalost

РУССКИЙ

ЧАСТОТА ЭПУЛИДОВ У СОБАК – РЕТРОСПЕКТИВНЫЕ ГИСТОПАТОЛОГИЧЕСКИЕ ИССЛЕДОВАНИЯ

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Ретроспективные гистопатологические исследования сделаны на 468 образчиков материала опухолей, полученных из собак, переданных Факультету ветеринарной медицины Университета в Тракии, Стара Загора, в периоде от 1991-2000, и полученные результаты показали эпюлиды в 29 образчиков (6,19%).

Согласно своему гистогенезу, повреждения разделены в две основные группы: реактивные повреждения – 37,94%, и периферические одонтогенные опухоли – 62,06%. Эпюлиды чаще всего установлены у самцов (68,96%) в сравнении с самками (31,04%). Средняя старость заражённых собак была 4 года для оба пола. В 18 случаев (62,06%), повреждения были на мандибуле, пока в 11 случаев (37,94%) они были на максиле. Самая сильная склонность к эпюлидам замечена у немецких овчарок – 27,58%.

Ключевые слова: собаки, эпюлиды, частота