

The buccal lymph node (*lymphonodus buccalis*) in dogs: Occurrence, anatomical location, histological characteristics and clinical implications

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Abstract

Three dogs were presented for clinical examination with bilateral buccal nodules which were identified as enlarged buccal lymph nodes. As little is known about this pathology, 150 dogs were examined by anatomical dissection for the presence of buccal lymph nodes. They were found in 13 dogs, occurring bilaterally in six dogs and unilaterally in seven dogs. Two buccal lymph nodes were bilobulated and one was double. The lymph nodes were always located dorsal to the zygomatic muscle and rostral to the masseter muscle in the region where the superior labial vein drains into the facial vein. Histology demonstrated a large amount of intranodal adipose tissue scattered throughout the lymphoid tissue. The canine buccal lymph node should not be confused with the accessory parotid or ventral buccal salivary gland and is clinically important as it can enlarge due to tumour metastasis or inflammation of the buccal region.

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1. Introduction

A 7-month-old Afghan hound, a 3.5-month-old Newfoundland pup and an 8-year-old Shar pei were presented for evaluation of bilateral nodular lesions in the buccal region (Figs. 1a, 1b and 1c). The nodules, which were not painful in any of the dogs, ranged from 1 to 2 cm in diameter and were diagnosed as enlarged buccal lymph nodes. In the Afghan Hound, clinical examination revealed no other abnormalities and the buccal lymph nodes spontaneously regressed. The Newfoundland pup had a subcutaneous abscess in the right upper lip. The Shar pei suffered from generalized peripheral lymphadenopathy and subsequently showed nodular lesions in the ears, the anal region and the perivulvar fold. Histopathological examination of

skin biopsy specimens revealed cutaneous non-epitheliotropic lymphoma.

The anatomical features and possible pathology of buccal lymph nodes are poorly documented. Rumph et al. (1980) described a clinical case of a 4-month-old male Labrador Retriever presented with masses rostroventral to each eye. The masses were periodically swollen, but seemed not to induce any disease. Based on this clinical case, the authors systematically looked for similar masses and found them in 15/171 examined Greyhounds. After histology, they concluded that the masses were lymph nodes which they named the facial lymph node. Shelton and Forsythe (1979) performed a similar study and found the lymph node, which they called the buccal lymph node (*lymphonodus buccalis*), in 22/250 dogs of various breeds, ages and sex. Both the studies of Shelton and Forsythe (1979) and Rumph et al. (1980) have been briefly reviewed by Evans (1993). Adams (1986) illustrated in a textbook drawing

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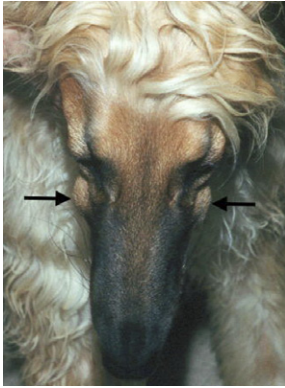


Fig. 1a. Bilateral enlargement of buccal lymph nodes (arrows) in an Afghan hound due to unknown aetiology.

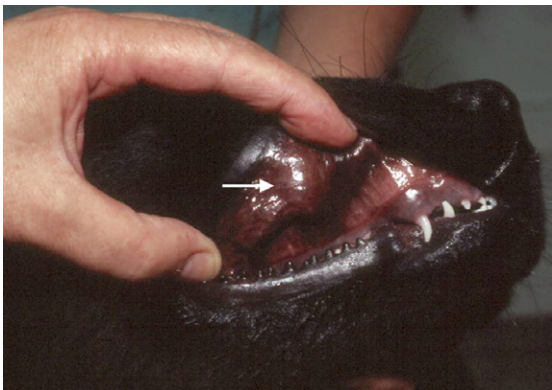


Fig. 1b. A 4-month-old Newfoundland pup with enlarged buccal lymph nodes caused by abscessation of the right upper lip (arrow).



Fig. 1c. Bilaterally enlarged buccal lymph nodes (arrows) in a Shar pei suffering from a cutaneous non-epitheliotropic lymphoma.

an anonymous but apparently similar lymph node located rostral to the angle of confluence of the facial and the superior labial veins.

The buccal lymph node has been described in various other species including humans, primates, rabbits, guinea pigs, rats and camels (Barone et al., 1950; Spira, 1962; Grassé, 1972; Grau, 1974; Barone, 1996). Since the presence of the canine buccal lymph node is rarely documented

in the literature and because of its possible clinical implications, a screening was performed to determine its prevalence, exact anatomical location and histological characteristics.

2. Materials and methods

The buccal regions of 150 dogs of various breeds, age and sex, euthanased for reasons other than this study, were examined macroscopically (Table 1). Photographs of each presumed buccal lymph node were taken using a digital camera (Canon EOS 300D) and samples for histological analysis were fixed in 3.5% buffered formaldehyde for 1 week followed by paraffin wax embedding using a histokinette (Shandon Citadel 1000, Thermo Electron). Tissue sections (8 µm thick) were made, mounted on slides, stained with haematoxylin (Hematoxylin C.I. 75290, Merck) and eosin (Eosine yellow C.I. 45380, VWR International) and examined with a motorized microscope (Olympus BX 61) linked to a digital camera (Olympus DP 50).

Table 1

Occurrence of the buccal lymph node in 150 dogs of various breeds

Breed	Number of dogs examined	Unilateral presence of buccal lymph node	Bilateral presence of buccal lymph node
American Staffordshire Terrier	10	0	0
Basset Hound	1	0	0
Beagle	2	0	0
Belgian Malinois	5	0	0
Belgian Tervuren	1	0	0
Berner Sennen	4	1	0
Boerboel	1	0	0
Border Collie	1	0	0
Bouvier des Flandres	3	1	0
Boxer	2	0	0
Bull Terrier	1	0	0
Collie	1	0	0
Dalmatian	1	0	0
Doberman Pincher	4	1	1
Dogue de Bordeaux	2	0	0
English Bulldog	1	0	0
Flat Coated Retriever	1	0	0
German Pointer	1	0	0
German Shepherd Dog	12	2	1
Giant Schnauzer	1	0	0
Golden Retriever	6	0	3
Great Dane	2	0	0
Groenendaler	1	0	0
Irish Setter	1	0	0
Jack Russell Terrier	9	0	0
Keeshond	1	0	0
Labrador Retriever	12	2	0
Maltese	1	0	0
Mongrel	41	0	0
Napolitan Mastiff	2	0	0
Newfoundland	3	0	0
Pekingese	1	0	0
Rottweiler	9	0	0
Saint Bernard	1	0	0
Shar pei	2	0	1
Siberian Husky	1	0	0
Standard Poodle	1	0	0
Weimaraner	1	0	0
Total	150	7	6

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