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1373 Influence of Periodontitis to Subgingival Microflora Development Around Osseointegrated Implants

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Objective: To investigate the influence of existing periodontitis in the development of putative periodontal pathogens around osseointegrated implants in an animal model using polymerase chain reaction (PCR). *Methods:* Six beagle dogs about one year old with good general health were used. After 3 weeks of oral hygiene control, silk ligatures were placed around mandibular 2nd premolars (eP2) and 1st molars (eM1) of the left mandible as the experimental side to establish periodontitis while P2 & M1 of the right side were continued with oral hygiene as control. The two mandibular 3rd premolars (P3) were extracted and after 3 months, ITI implants were placed in both P3 positions, one in the experimental side (eI) and the other in the control side (cI) in each dog. After 2-week of healing, subgingival microbial samples were taken from the sulcus of eI and cI at day 0 and 7, and at 1-, and 3-month. Species-specific PCR primers for 8 putative periodontal pathogens were used for analysis of the microbial samples: *A. actinomycetemcomitans (A.a.)*, *C. rectus (C.r.)*, *E. corrodens (E.c.)*, *P. gingivalis (P.g.)*, *P. intermedia (P.i.)*, *P. nigrescens (P.n..)*, *T. denticola (T.d.)* and *T. forsythensis (T.f.)*. Chi-square/Fisher Exact test were used to compare detection frequencies of different species between eI and cI. *Results:* >4mm probing depth around all eP2 and eM1 were found and suppuration was detected in 7 out of the 12 teeth after 3 months. The detection frequencies in samples from eI and cI of the 8 putative pathogens were shown below:

	A.a.		C.r. *		E.c. *		P.g. *		P.i. *		P.n. *		T.d. *		T.f. *	
	eI%	cI%	eI%	cI%	eI%	cI%	eI%	cI%	eI%	cI%	eI%	cI%	eI%	cI%	eI%	cI%
Day 0	0	0	83	0	33	0	58	0	25	0	0	0	42	0	17	0
Day 7	0	0	100	0	100	0	100	8	100	8	0	0	100	0	25	0
1-month	0	0	100	0	100	8	100	8	100	8	58	0	100	8	75	0
3-month	0	0	100	8	100	0	100	17	100	8	58	0	100	8	100	0
* p< 0.001 between eI% and cI%																

Conclusion: The results suggested that existing periodontitis might have an influence in the development of putative periodontal pathogens around osseointegrated implants in an animal model. (Supported by HKU CRCG Grant No. 1020086)

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