

Anterior arch form-specific analysis of alveolar bone thickness and tooth inclination:

Associations and clinical relevance in skeletal Class II malocclusion

Supplementary Information

Additional file 3

Table S2. Comparison of alveolar bone thickness among different arch form groups within three ranges of labio-palatal tooth inclination (mm).

	Square	Ovoid	Tapered	
	Median $\pm$ IQR	Median $\pm$ IQR	Median $\pm$ IQR	<i>P</i> Value
Central incisors				
Labio-palatal tooth inclination $<100^\circ$				
Labial				
L3	1.13 $\pm$ 0.65	1.18 $\pm$ 0.56	1.00 $\pm$ 0.49	0.326
L6	1.09 $\pm$ 0.33	0.90 $\pm$ 0.13	0.85 $\pm$ 0.66	0.417
La	1.41 $\pm$ 0.76	1.51 $\pm$ 0.38	1.83 $\pm$ 1.73	0.071
Palatal				
P3	2.41 $\pm$ 1.28	1.46 $\pm$ 1.04	1.00 $\pm$ 0.78	0.032*
P6	4.79 $\pm$ 2.28	2.66 $\pm$ 1.51	2.04 $\pm$ 1.40	0.010*
Pa	9.39 $\pm$ 1.92	7.89 $\pm$ 1.17	7.55 $\pm$ 1.99	0.012*
$100^\circ \leq$ Labio-palatal tooth inclination $<110^\circ$				
Labial				
L3	1.26 $\pm$ 0.40	1.18 $\pm$ 0.28	1.13 $\pm$ 0.36	0.317
L6	1.13 $\pm$ 0.63	0.85 $\pm$ 0.23	0.91 $\pm$ 0.51	0.275
La	1.88 $\pm$ 0.57	1.66 $\pm$ 0.48	1.85 $\pm$ 1.27	0.279
Palatal				
P3	1.60 $\pm$ 0.53	1.82 $\pm$ 0.80	0.90 $\pm$ 0.62	0.025*
P6	2.85 $\pm$ 1.10	3.05 $\pm$ 1.60	2.00 $\pm$ 0.98	0.047*
Pa	8.22 $\pm$ 2.14	8.16 $\pm$ 2.04	7.70 $\pm$ 1.84	0.498
Labio-palatal tooth inclination $\geq 110^\circ$				
Labial				

L3	1.13 ± 0.62	1.09 ± 0.15	0.95 ± 0.27	0.075
L6	1.12 ± 0.24	0.82 ± 0.22	0.93 ± 0.30	0.011*
La	2.18 ± 0.58	2.12 ± 1.17	2.47 ± 1.82	0.438
Palatal				
P3	1.56 ± 0.49	0.98 ± 0.32	0.99 ± 0.72	0.024*
P6	3.02 ± 1.14	1.89 ± 1.47	2.50 ± 1.62	0.144
Pa	7.30 ± 1.11	6.88 ± 2.72	7.47 ± 3.12	0.738

Lateral incisors

Labio-palatal tooth inclination $<100^\circ$

Labial

L3	1.47 ± 0.48	0.95 ± 0.50	0.56 ± 0.49	0.015*
L6	0.96 ± 0.31	0.87 ± 0.22	0.37 ± 0.68	0.075
La	1.72 ± 0.76	1.32 ± 0.65	1.56 ± 0.43	0.990

Palatal

P3	1.37 ± 1.17	1.23 ± 0.83	1.27 ± 0.42	0.403
P6	3.41 ± 1.82	1.88 ± 1.21	2.58 ± 1.67	0.151
Pa	9.79 ± 5.64	6.56 ± 1.87	6.71 ± 4.11	0.221

$100^\circ \leq$ Labio-palatal tooth inclination $<110^\circ$

Labial

L3	1.19 ± 0.61	0.94 ± 0.99	0.63 ± 0.40	0.000*
L6	0.77 ± 0.34	0.80 ± 0.15	0.72 ± 0.59	0.377
La	2.00 ± 0.63	1.55 ± 1.07	1.74 ± 1.44	0.312

Palatal

P3	1.42 ± 0.66	1.23 ± 0.21	1.31 ± 1.26	0.400
P6	2.43 ± 1.20	1.93 ± 0.88	2.64 ± 3.19	0.231
Pa	6.34 ± 2.08	6.81 ± 2.00	6.84 ± 5.32	0.826

Labio-palatal tooth inclination $\geq 110^\circ$

Labial

L3	0.87 ± 0.49	1.18 ± 0.45	0.74 ± 0.21	0.009*
L6	0.80 ± 0.64	0.62 ± 0.13	0.60 ± 0.41	0.415

La	1.83 ± 1.16	1.95 ± 0.70	1.99 ± 1.19	0.373
Palatal				
P3	1.13 ± 0.67	1.13 ± 0.55	0.79 ± 0.48	0.171
P6	2.13 ± 0.89	1.84 ± 1.60	1.80 ± 1.67	0.912
Pa	6.04 ± 2.74	5.66 ± 3.57	5.26 ± 2.84	0.471
Canines				
Labio-palatal tooth inclination <90°				
Labial				
L3	1.56 ± 0.48	1.44 ± 0.26	1.02 ± 0.79	0.089
L6	1.42 ± 0.66	1.18 ± 0.37	0.91 ± 0.56	0.032*
La	1.52 ± 0.83	1.46 ± 0.29	1.78 ± 0.97	0.566
Palatal				
P3	1.58 ± 0.88	1.35 ± 0.96	1.31 ± 0.71	0.379
P6	3.35 ± 1.50	2.44 ± 1.22	2.76 ± 1.37	0.756
Pa	10.08 ± 4.73	8.39 ± 2.43	7.70 ± 5.44	0.108
90° ≤ Labio-palatal tooth inclination <100°				
Labial				
L3	1.59 ± 0.48	1.24 ± 0.87	0.85 ± 1.00	0.008*
L6	1.24 ± 0.61	1.20 ± 0.42	0.83 ± 0.54	0.035*
La	1.55 ± 0.61	1.32 ± 0.36	1.46 ± 0.77	0.313
Palatal				
P3	1.53 ± 0.76	1.35 ± 0.72	0.85 ± 0.59	0.008*
P6	3.40 ± 0.90	2.46 ± 1.25	2.06 ± 1.28	0.017*
Pa	10.38 ± 2.70	8.45 ± 4.35	6.92 ± 4.82	0.002*
Labio-palatal tooth inclination ≥100°				
Labial				
L3	0.68 ± 0.72	1.13 ± 0.87	0.33 ± 0.73	0.038*
L6	1.10 ± 0.55	1.03 ± 0.50	0.86 ± 0.59	0.281
La	1.99 ± 1.24	2.36 ± 1.62	1.75 ± 1.14	0.878
Palatal				

P3	1.01 ± 0.96	1.58 ± 0.58	0.99 ± 0.51	0.185
P6	2.54 ± 1.37	3.09 ± 0.53	2.12 ± 1.70	0.181
Pa	6.55 ± 2.59	8.96 ± 5.56	10.68 ± 3.60	0.085

A Kruskal-Wallis H test was used for comparison of alveolar bone thickness among different dental arch form groups.

IQR, interquartile range; L3, labial alveolar bone thickness at 3 mm apically from the CEJ to the root apex level; L6, labial alveolar bone thickness at 6 mm apically from the CEJ to the root apex level; La, labial alveolar bone thickness at the root apex level; P3, palatal alveolar bone thickness at 3 mm apically from the CEJ to the root apex level; P6, palatal alveolar bone thickness at 6 mm apically from the CEJ to the root apex level; Pa, palatal alveolar bone thickness at the root apex level.

*Statistically significant ($P < 0.05$).