**Additional file 2**

**Table S2.** Definition of cephalometric measurements used in this study

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| Measurements | Definition |
| Skeletal measurements (9) |
| SNA (°) | The angle formed between points S, N, and A. |
| SNB (°) | The angle formed between points S, N, and B. |
| ANB (°) | The angle formed between points A, N, and B. |
| SND (°) | The angle formed between points S, N, and D. |
| NP-FH (°) | The angle formed by line N-Pg and Frankfort horizontal plane (P-Or). |
| MP-FH (°) | The angle formed by mandibular plane (Go-Me) and Frankfort horizontal plane (P-Or). |
| MP-SN (°) | The angle formed by mandibular plane (Go-Me) and line S-N. |
| Y axis (°) | The angle formed by line S-Gn and Frankfort horizontal plane (P-Or). |
| Pg-NB (mm) | The distance between point Pg and line N-B. |
| Dental measurements (12) |
| U1-NA (mm) | The distance between point U1 tip and line N-A. |
| U1-NA (°) | The angle formed by upper incisor axes and line N-A. |
| L1-NB (mm) | The distance between point L1 tip and line N-B. |
| L1-NB (°) | The angle formed by lower incisor axes and line N-B. |
| U1-L1 (°) | The angle formed by the intersection of upper incisor and lower incisor axes. |
| U1-SN (°) | The angle formed by upper incisor axes and line S-N. |
| L1-MP (°) | The angle formed by lower incisor axes and mandibular plane (Go-Me). |
| L1-FH (°) | The angle formed by lower incisor axes and Frankfort horizontal plane (P-Or). |
| U1-AP (mm) | The distance between point U1 tip and line A-Pg. |
| U1-AP (°) | The angle formed by upper incisor axes and line A-Pg. |
| L1-AP (mm) | The distance between point L1 tip and line A-Pg. |
| L1-AP (°) | The angle formed by lower incisor axes and line A-Pg. |
| Soft tissue measurements (2) |
| LL-EP (mm) | The distance between point LL and E plane (line Prn-Pg’). |
| UL-EP (mm) | The distance between point UL and E plane (line Prn-Pg’). |