

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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APPENDIX A

Surgical protocols

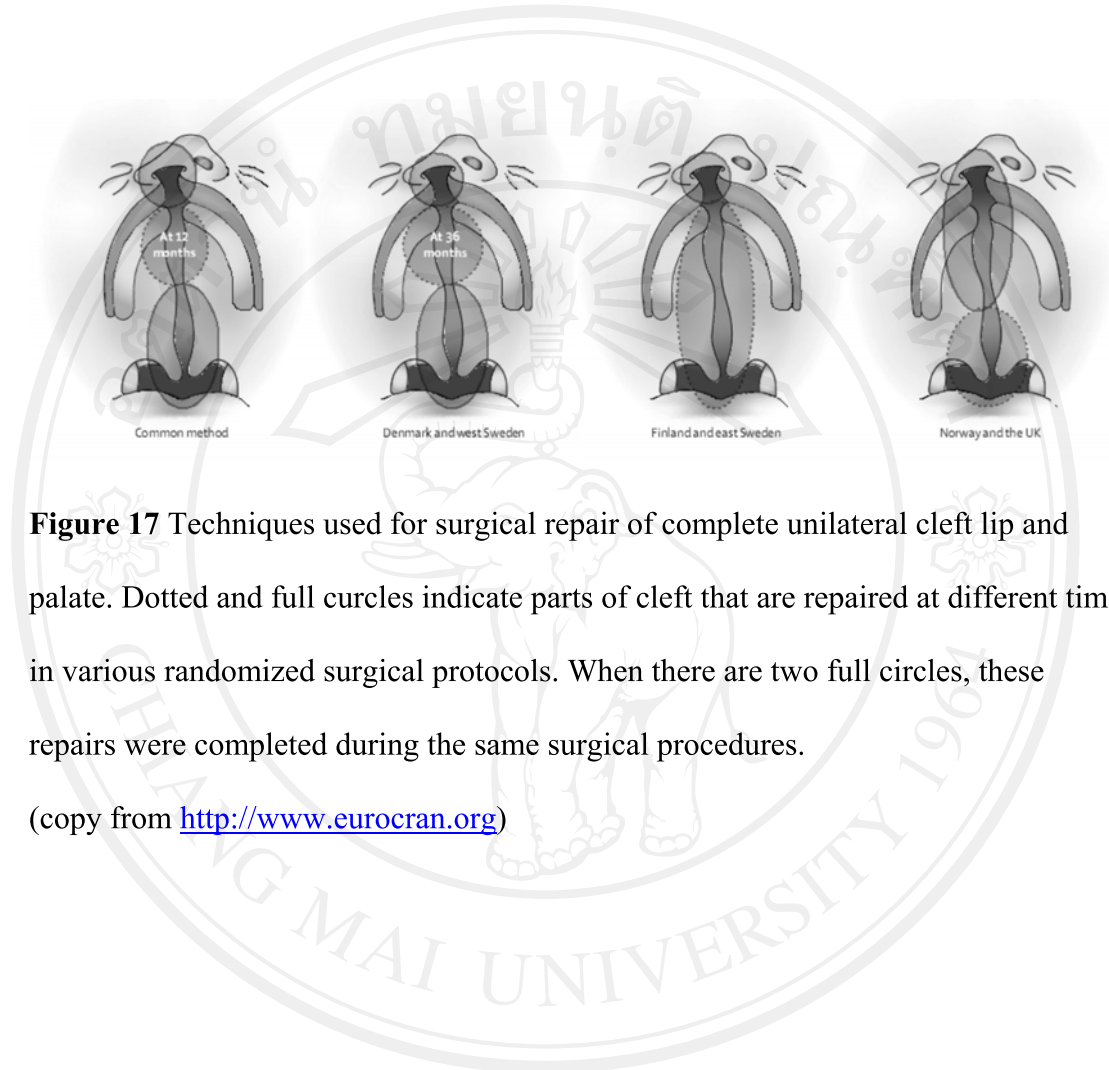


Figure 17 Techniques used for surgical repair of complete unilateral cleft lip and palate. Dotted and full circles indicate parts of cleft that are repaired at different times in various randomized surgical protocols. When there are two full circles, these repairs were completed during the same surgical procedures.

(copy from <http://www.eurocran.org>)

APPENDIX B

Goslon Yardstick

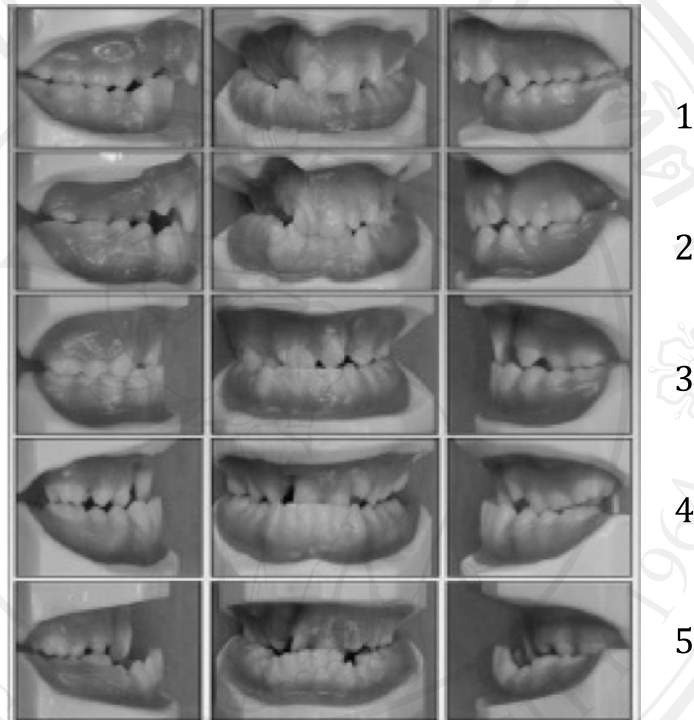


Figure 18 Goslon Yardstick was the models that used for rate the dental arch relationship. According to the Goslon scale, groups 1 and 2 have occlusions that require simple orthodontic treatments, and group 3 needs complex orthodontic treatment. Individuals in group 4 are at the limit of orthodontic treatment and orthognathic surgery might be dispensable; whereas, subjects in group 5 require combined orthodontic and/or surgical therapy.

APPENDIX C

Sample size estimation

The sample size estimation of 2 group study for Independent *t*-test (William G. C., 1977)

$$n = \frac{2[(Z_{\alpha} + Z_{\beta})\sigma]^2}{(\mu_1 - \mu_2)^2}$$

σ = Common SD of outcome variable in two groups

$\mu_1 - \mu_2$ = Difference in mean between two groups

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APPENDIX D

Errors of measurement

The errors of measurement by the intrainvestigator were presented in Table 10. The statistical value showed no significant difference ($p < 0.05$) between the first and second measurements.

Table 12 Comparison of the first and second measurements between the intra-investigator.

| Variables | First measurement | | Second measurement | | t-value | r |
|------------------------|-------------------|---------|--------------------|---------|---------|-------|
| | Mean | SD | Mean | SD | | |
| <u>One-stage group</u> | | | | | | |
| Anterior arch width | 30.6467 | 4.83002 | 30.725 | 4.78071 | -2.076 | 0.996 |
| Posterior arch width | 44.1333 | 4.47515 | 44.0975 | 4.48272 | 0.599 | 0.997 |
| Anterior overjet | -2.0283 | 1.47938 | -2.0517 | 1.39854 | 0.34 | 0.997 |
| Anterior overbite | 4.2942 | 1.73257 | 4.325 | 1.81111 | -0.425 | 0.997 |
| <u>Two-stage group</u> | | | | | | |
| Anterior arch width | 29.1055 | 2.87883 | 29.0918 | 2.87162 | 0.132 | 1.000 |
| Posterior arch width | 44.3591 | 3.11161 | 44.2391 | 3.12884 | 2.184 | 0.999 |
| Anterior overjet | -3.8509 | 2.99635 | -3.8727 | 3.10768 | 0.353 | 0.988 |
| Anterior overbite | 4.0655 | 1.85555 | 4.0982 | 1.86696 | -0.476 | 0.991 |

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APPENDIX E

Table 13 Raw data of one-stage closure (Group 1)

| Subjects | Age | Gender | Cleft side | Anterior arch width | Posterior arch width | Anterior overjet | Anterior overbite | Anterior crossbite | Lateral crossbite | Lip repair (months) | Technique | Palate repair (months) | technique |
|----------|-----|--------|------------|---------------------|----------------------|------------------|-------------------|--------------------|-------------------|---------------------|--------------|------------------------|--------------|
| 1 | 9 | male | left | 34.03 | 46.17 | 0 | 5.65 | no | no | 13 | onisuka | 13 | V-Y |
| 2 | 9 | female | right | 39.56 | 49.6 | -1.33 | 4.14 | yes | no | 13 | onisuka | 13 | V-Y |
| 3 | 10 | male | left | 26.56 | 40.81 | -2.49 | 6.74 | yes | yes | 9 | onisuka | 9 | V-Y |
| 4 | 9 | male | left | 26.7 | 34.37 | -1.43 | 4.38 | no | yes | 14 | onisuka | 14 | V-Y |
| 5 | 11 | female | left | 23.98 | 45.89 | -1.48 | 3.78 | no | yes | 12 | onisuka | 12 | V-Y |
| 6 | 11 | female | right | 34.53 | 46.39 | -2.14 | 4.30 | yes | yes | 13 | onisuka | 13 | V-Y |
| 7 | 9 | male | left | 32.84 | 44.38 | -5.36 | 3.06 | yes | yes | 12 | onisuka | 12 | V-Y |
| 8 | 9 | female | right | 23.82 | 39.93 | -1.69 | 4.41 | yes | yes | 24 | onisuka | 24 | V-Y |
| 9 | 7 | male | right | 33.72 | 42.59 | -2.82 | 3.76 | yes | no | 12 | onisuka | 12 | V-Y |
| 10 | 9 | male | left | 28.93 | 47.99 | 0 | 0 | yes | yes | 14 | onisuka | 14 | V-Y |
| 11 | 8 | female | left | 29.47 | 41.76 | -3.64 | 6.34 | yes | yes | 24 | not recorded | 24 | not recorded |
| 12 | 6 | male | left | 33.57 | 49.69 | -1.96 | 4.97 | yes | yes | 19 | onisuka | 19 | V-Y |

Table 14 Raw data of two-stage closure (Group 2).

| Subjects | Age | Gender | Cleft side | Anterior arch width | Posterior arch width | Anterior overjet | Anterior overbite | Anterior crossbite | Lateral crossbite | Lip repair (months) | Technique | Palate repair (months) | technique |
|----------|-----|--------|------------|---------------------|----------------------|------------------|-------------------|--------------------|-------------------|---------------------|--------------|------------------------|--------------|
| 1 | 10 | male | right | 33.50 | 49.41 | -5.58 | 7.13 | yes | yes | 3 | onisuka | 12 | V-Y |
| 2 | 9 | female | right | 27.23 | 44.65 | -1.96 | 1.71 | yes | yes | 3 | onisuka | 15 | V-Y |
| 3 | 9 | male | left | 29.65 | 43.77 | -3.46 | 6.68 | yes | yes | 5 | onisuka | 13 | V-Y |
| 4 | 9 | female | left | 24.88 | 49.21 | -5.62 | 4.53 | yes | yes | 8 | onisuka | 18 | V-Y |
| 5 | 10 | female | right | 29.94 | 39.96 | 0.00 | 2.18 | yes | no | 5 | onisuka | 8 | V-Y |
| 6 | 11 | female | left | 25.95 | 44.62 | -4.6 | 4.86 | yes | yes | 3 | onisuka | 12 | not recorded |
| 7 | 8 | male | left | 30.19 | 44.10 | -10.20 | 5.41 | yes | yes | 2 | tennison | 12 | V-Y |
| 8 | 10 | male | left | 33.06 | 46.01 | -2.29 | 4.20 | yes | yes | 3 | not recorded | 12 | not recorded |
| 9 | 8 | male | left | 29.04 | 44.16 | 0 | 2.47 | yes | yes | 4 | not recorded | 16 | not recorded |
| 10 | 6 | male | left | 30.94 | 39.82 | -2.52 | 3.30 | yes | no | 3 | not recorded | 18 | V-Y |
| 11 | 11 | female | left | 25.78 | 42.24 | -6.13 | 2.25 | yes | yes | 10 | not recorded | 15 | V-Y |

Table 15 Crossbite evaluation of the one-stage closure group (Group 1) according to Huddart and Bodenham score

| Subjects | Cleft | | Right | | | | Anterior | | Left | | | | Cross bite score | | | | Cross bite evaluation | | | |
|----------|-------|----|-------|----|----|----|----------|----|------|----|----|-----------|------------------|-----------|----------|-----------|-----------------------|-----------|----------|-----------|
| | side | 6 | E | D | C | 1 | 1 | C | D | E | 6 | Posterior | Anterior | Posterior | Anterior | Posterior | Anterior | Posterior | Anterior | Posterior |
| 1 | Left | 0 | - | 0 | 0 | 0 | -2 | 0 | -1 | 0 | 0 | 0 | -2 | 0 | -2 | -1 | no | no | no | no |
| 2 | Right | 0 | -1 | - | 0 | -2 | -2 | 0 | - | 0 | 0 | -1 | -4 | -1 | 0 | no | yes | no | yes | no |
| 3 | Left | 0 | - | -1 | - | -2 | -2 | - | - | -2 | -2 | -1 | -4 | -1 | -4 | no | yes | no | yes | yes |
| 4 | Left | - | -1 | 0 | 0 | 0 | -2 | -2 | -2 | - | - | -1 | -2 | -1 | -6 | no | no | no | no | yes |
| 5 | Left | 0 | -1 | -2 | 0 | 0 | -2 | -2 | -1 | 0 | 0 | -3 | -2 | -3 | -5 | no | no | no | no | yes |
| 6 | Right | 0 | -1 | -2 | -1 | -2 | -2 | - | 0 | 0 | 0 | -4 | -4 | -4 | 0 | yes | yes | yes | yes | no |
| 7 | Left | -2 | - | -2 | -2 | -2 | -2 | -2 | - | -1 | -1 | -6 | -4 | -6 | -5 | yes | yes | yes | yes | yes |
| 8 | Right | 0 | -2 | -1 | -1 | -2 | -2 | 0 | - | 0 | 0 | -4 | -4 | -4 | -2 | yes | yes | yes | yes | no |
| 9 | Right | - | 0 | 0 | 0 | -2 | -2 | -1 | 0 | - | - | 0 | -4 | 0 | -3 | no | yes | no | yes | no |
| 10 | Left | 0 | -1 | -1 | -1 | -2 | -1 | -2 | -1 | 0 | 0 | -3 | -3 | -3 | -5 | no | yes | no | yes | yes |
| 11 | Left | -1 | -2 | -2 | -2 | -2 | -2 | -2 | -1 | 0 | 0 | -7 | -4 | -7 | -5 | yes | yes | yes | yes | yes |
| 12 | Left | - | -1 | - | 0 | -2 | -2 | -1 | -1 | - | - | -1 | -4 | -1 | -4 | no | yes | no | yes | yes |

Table 16 Crossbite evaluation of the two-stage closure group (Group 2) according to Huddart and Bodenham score

| Subjects | Cleft side | Right | | | | Anterior | | | | Left | | | | Cross bite score | | | Cross bite evaluation | | |
|----------|------------|-------|----|----|----|----------|----|----|----|------|----|----|----|------------------|----------|-----------|-----------------------|----------|-----------|
| | | 6 | E | D | C | 1 | 1 | 1 | 1 | C | D | E | 6 | Posterior | Anterior | Posterior | Posterior | Anterior | Posterior |
| 1 | Right | 0 | -1 | -2 | -2 | -2 | -2 | -2 | -2 | - | - | -1 | 0 | -5 | -4 | -1 | yes | yes | no |
| 2 | Right | 0 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | 0 | 0 | 0 | 0 | -6 | -3 | 0 | yes | yes | no |
| 3 | Left | -2 | - | - | -2 | -2 | -2 | -2 | -2 | -1 | -1 | 0 | 0 | -4 | -4 | -4 | yes | yes | yes |
| 4 | Left | 0 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -1 | -6 | -4 | -7 | yes | yes | yes | |
| 5 | Right | 0 | - | -1 | -2 | -2 | -2 | -2 | -2 | 0 | 0 | 0 | -3 | -3 | 0 | no | yes | no | |
| 6 | Left | 0 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -6 | -4 | -8 | yes | yes | yes | |
| 7 | Left | 0 | 0 | - | -2 | -2 | -2 | -2 | -2 | - | - | -2 | -2 | -2 | -4 | -4 | yes | yes | yes |
| 8 | Left | 0 | 0 | 0 | 0 | -2 | -2 | -2 | -2 | -2 | -2 | 0 | 0 | 0 | -4 | -6 | yes | yes | yes |
| 9 | Left | - | -2 | - | -1 | -2 | -2 | -2 | -2 | -1 | -1 | 0 | -3 | -3 | -4 | -4 | yes | yes | yes |
| 10 | Left | - | 0 | 0 | -2 | -2 | -2 | -2 | -2 | -1 | 0 | - | -2 | -4 | -3 | no | yes | no | |
| 11 | Left | 0 | -2 | -2 | 0 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -4 | -4 | -6 | yes | yes | yes | |