**Supplementary Materials**

**Supercapsular percutaneously-assisted total hip (SuperPath) versus posterolateral total hip arthroplasty in bilateral osteonecrosis of the femoral head: a pilot clinical trial**

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**Table S1**. Comparisons of the range of motion, pain VAS, HHS at the day before surgery and postoperative 12 months.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Parameters** | **SuperPath** | | **P values** | **PLA** | | ***P* values** |
| **Preop** | **Postop 12 months** | **Preop** | **Postop 12 months** |
| Flexion | 94.75 ± 8.73 | 125.00 ± 5.77 | 0.004 | 90.25 ± 19.85 | 124.75 ± 4.11 | 0.054 |
| Abduction | 21.25 ± 13.14 | 40.25 ± 3.68 | 0.043 | 20.00 ± 7.07 | 41.25 ± 2.50 | 0.011 |
| Adduction | 16.25 ± 5.67 | 25.75 ± 1.50 | 0.035 | 15.25 ± 6.70 | 26.25 ± 4.78 | 0.026 |
| External rotation | 24.75 ± 7.08 | 35.25 ± 0.50 | 0.06 | 22.00 ± 3.55 | 33.75 ± 4.78 | 0.002 |
| Pain VAS | 8.25 ± 0.95 | 0.50 ± 0.57 | 0.001 | 8.00 ± 0.81 | 0.25 ± 0.50 | 0.001 |
| HHS | 37.86 ± 13.27 | 92.50 ± 1.73 | 0.005 | 37.66 ± 7.02 | 92.50 ± 1.73 | 0.001 |

Values are expressed as mean ± standard deviation. HHS, Harris hip score; PLA, posterolateral approach; SuperPath, Supercapsular Percutaneously-Assisted Total Hip; VAS, visual analogue scale.

**Table S2**. Perioperative changes of serum markers.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Serum markers** | **Timings** | **SuperPath** | **PLA** | ***P* values** |
| CRP (mg/L) | preop | 3.12 ± 1.30 | 5.07 ± 2.13 | 0.212 |
| postop day 1 | 85.25 ± 28.72 | 82.77 ± 16.67 | 0.901 |
| postop day 3 | 111.15 ± 16.33 | 108.87 ± 13.50 | 0.796 |
| postop day 14 | 6.16 ± 5.45 | 6.97 ± 2.73 | 0.844 |
| ESR (mm/h) | preop | 17.25 ± 8.22 | 16.75 ± 6.34 | 0.783 |
| postop day 1 | 30.75 ± 6.34 | 30.50 ± 9.11 | 0.928 |
| postop day 3 | 51.75 ± 21.42 | 47.75 ± 8.77 | 0.794 |
| postop day 14 | 28.75 ± 9.28 | 26.50 ± 12.60 | 0.841 |
| CK (U/L) | preop | 96.25 ± 46.34 | 131.75 ± 70.79 | 0.099 |
| postop day 1 | 970.25 ± 169.15 | 899.50 ± 188.10 | 0.452 |
| postop day 3 | 568.50 ± 263.57 | 517.25 ± 231.99 | 0.693 |
| postop day 14 | 125.25 ± 34.89 | 98.75 ± 62.41 | 0.297 |

Values are expressed as mean ± standard deviation. PLA, posterolateral approach; SuperPath, supercapsular percutaneously-assisted total hip arthroplasty; CRP, C-reactive protein; CK, Creatine kinase; ESR, Erythrocyte sedimentation rate.

**Table S3.** Range of motion.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Types of motion** | **Timings** | **SuperPath** | **PLA** | ***P* value** |
| Flexion | preop | 94.75 ± 8.73 | 90.25 ± 19.85 | 0.626 |
| postop 3 months | 112.50 ± 5.00 | 116.25 ± 4.78 | 0.278 |
| postop 6 months | 118.75 ± 2.50 | 118.75 ± 6.29 | 1.000 |
| postop 12 months | 125.00 ± 5.77 | 124.75 ± 4.11 | 0.919 |
| Abduction | preop | 21.25 ± 13.14 | 20.00 ± 7.07 | 0.809 |
| postop 3 month | 37.50 ± 2.88 | 38.25 ± 2.36 | 0.650 |
| postop 6 month | 38.75 ± 2.50 | 38.75 ± 2.50 | 1.000 |
| postop 12 months | 40.25 ± 3.68 | 41.25 ± 2.50 | 0.690 |
| Adduction | preop | 16.25 ± 5.67 | 15.25 ± 6.70 | 0.774 |
| postop 3 months | 21.50 ± 4.04 | 21.25 ± 2.50 | 0.889 |
| postop 6 months | 25.75 ± 1.50 | 23.25 ± 4.57 | 0.206 |
| postop 12 months | 25.75 ± 1.50 | 26.25 ± 4.78 | 0.827 |
| External rotation | preop | 24.75 ± 7.08 | 22.00 ± 3.55 | 0.367 |
| postop 3 months | 30.25 ± 3.68 | 31.50 ± 3.10 | 0.194 |
| postop 6 months | 33.25 ± 2.36 | 32.50 ± 2.88 | 0.650 |
| postop 12 months | 35.25 ± 0.50 | 33.75 ± 4.78 | 0.595 |

Values are expressed as mean ± standard deviation. PLA, posterolateral approach; SuperPath, Supercapsular Percutaneously-Assisted Total Hip.