

## 세라믹-세라믹 관절면 Osteonics® System을 이용한 무시멘트 인공 고관절 전치환술의 8년 추시 결과

### Cementless Total Hip Arthroplasty using Ceramic-on-ceramic Osteonics® System: Minimum 8-year Follow up Results

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**Purpose:** To evaluate the 8-year follow up results of the clinical and radiographic of the cementless total hip arthroplasty using the Osteonics® system with ceramic-on-ceramic articulation on a retrospective basis.

**Materials and Methods:** Between March 1999 and February 2000, 31 primary total hip arthroplasties were performed in 27 patients using the cementless Osteonics® system. The mean follow-up period was 101 months (96-107 months). The mean age at surgery was 56.5 years of age (28-62 years). Preoperative diagnoses were the following in the 27 patients: 5 cases of primary osteoarthritis, 15 cases of avascular necrosis, and 7 cases of secondary osteoarthritis. The clinical results were evaluated using the Harris hip score and radiographic evaluation was done in terms of the fixation of components, the prevalence of osteolysis, and wear of ceramics.

**Results:** The mean preoperative Harris hip score at was the most recent follow-up was 91. Complications were calcar fracture in 8 cases, posterior dislocation in 2 cases, continuous thigh pain in 2 cases, squeaking sound in 3 cases, and limping gait lasting at least 1-year post operation in 6 cases. All cases had fixation by bony ingrowth was and there was no migration of acetabular cups nor osteolysis. There was no loosening of the femoral stem. It was not possible to measure ceramic wear and there were no ceramic fractures.

**Conclusion:** At the 8-year follow-up, results of the cementless total hip arthroplasty using the Osteonics® system with ceramic-on-ceramic articulation demonstrated favorable results of osseointegration of the components and unmeasurable ceramic wear. However, longer-term-follow up was necessary. We believe that further study is required to determine the high incidence of squeaking.

**Key Words:** Hip, Total hip arthroplasty, Ceramic-on-ceramic articulation

(porous coating)

(press fit)

(bone ingrowth)

1980

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1- 4)

1,4,5,6

1960

7)

8,9)

10- 12)

Osteonics® system (Stryker Orthopaedics, Mahway, NJ, USA)

8

1999 3 2000 2

Osteonics® system

Osteonics® system

1- 2 mm reamer

(press fit)

porous coating hydroxyapatite

patite

porous

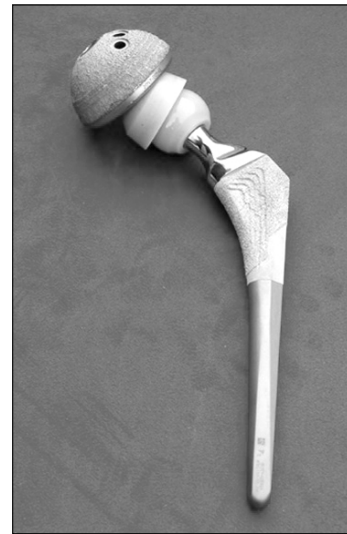


Fig. 1. This photograph shows Osteonics® system with ceramic-on ceramic articulation

coating hydroxyapatite

(Fig 1).

38 , 45

11

8

27 , 31

101

96

107

27

14

13

28

62

56.5

5 (18%),

15 (54%),

7 (28%)

(Modified Hardinge

approach)

(press fit)

1- 2

5

48

2 , 6 , 1

Harris

13

, 90

(Excellent), 90



, 3 2 , 4 3 , 5 1

28

round off

. Calcar round off 28

8

0.04 mm/

Osteonics® system 8

100%

3.

8

(press fit)

. 6

Engh <sup>23</sup> Hwang Son<sup>24</sup>

1

, 31

4

7 (26%)

Brooker <sup>16</sup>

tion zone)  
(stress concentra-

(transi-

(stress concentra-

7 grade I

3

3

6

<sup>25</sup>

2

1

2 (7.40%)

8%

Engh <sup>23</sup> 5.6%

Hwang Son<sup>24</sup>

Yang <sup>21</sup>

6.26, 27)

Yoo <sup>22</sup>

3

8 (29.6%)

Osteonics® system trial

1.8 mm

Harris

57

91

. Morlock <sup>28</sup>

Walter<sup>29</sup> Q66%  
14  
(safe zone)  
Baek Kim<sup>30</sup> 20%

Osteonics<sup>®</sup> system

8

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: 세라믹-세라믹 관절면의 Osteonics® system을 이용한 무시멘트 인공고관절 전치환술 후 8년 추시 결과를 후향적으로 평가하였다.

: 1999년 3월부터 2000년 2월까지 Osteonics® system으로 고관절 전치환술을 시행 받고 8년 이상 추시가 가능하였던 27명 31예를 대상으로 하였다. 평균 추시기간은 101개월(96-107개월)이었으며, 평균연령은 56.5세(28-62세)였다. 진단은 원발성 고관절염 5명, 대퇴골두 무혈성괴사 15명, 비구 이형성 등에 의한 이차성 고관절염이 7명이었다. 임상적 결과는 Harris 고관절 점수를 이용하여 평가하였고, 방사선학적 결과는 삽입물의 고정도, 골용해 발생, 관절면 마모 등을 관찰하여 평가하였다.

: 최종 추시 시 평균 Harris 고관절 점수는 91점이었다. 합병증으로는 대퇴 스템 삽입 시 발생한 대퇴거 부위의 선상 골절이 8예, 후방 탈구가 2예, 지속적인 대퇴부 동통 2예, 관절내 소리 3예, 일 년 이상 지속된 파행이 6예에서 관찰되었다. 방사선 추시 관찰시 전례에서 골성 고정을 얻어 비구컵과 대퇴스스템의 이동, 위치 변형, 침강, 이완은 관찰되지 않았고 골용해 소견도 관찰되지 않았다. 세라믹 관절면의 마모는 측정할 수 없었으며 세라믹의 골절은 없었다.

: 세라믹-세라믹 Osteonics® system을 이용한 무시멘트 인공고관절 치환술의 8년 추시 결과, 전례에서 골내성장 고정을 얻을 수 있었고 세라믹 관절면의 마모는 관찰되지 않아 양호한 결과를 얻을 수 있었으나 장기 추시 결과가 필요하다고 생각되었으며 관절내 소리의 발생에 대해서는 좀 더 적극적인 연구가 필요할 것으로 사료된다.

: 고관절, 인공 고관절 전치환술, 세라믹-세라믹 관절면