

Grit blasted

tapered wedge design corundum
blasting
가 , (retrieval study)
(biologic fixation),
Primary fixation : Press-fit (Shrink fit)
(primary mechanical Press-fit²⁾
stability³⁾.
, size가
tapered wedge
“ fit and stress relax-
fill” , ation
porous coating shear stress가
(bone ingrowth) ^{2,6)} wedge
, reaming rasping
double curve
tapered
tapered wedge ^{25,26)} press-fit
“ press fit ” press-fit fixation
corundum blasting (subsidence)
bone ongrowth ^{2,25,26)} ^{2,12,24)}

:

Secondary fixation : Biologic fixation (cementless spotorno, Centerpulse)
 Zweymuller stem²⁶⁾ (SL-plus stem, Endoprothetik) (Fig. 1). CLS stem²⁵⁾ - (Ti-6Al-7Nb)
 (osseointegration) conical rib
 metaphysis press-fit . Zweymuller stem²⁶⁾ double taper rectangular shape metaphysiodiaphysis press-fit
 150 μm 1) porous structure hydroxyapatite alumina corundum blasting
 corundum blasting alumina powder media nozzle (Ra) 3~7 μm bead sintering plasma
 spray 가 12,14) 13) 10 2~3% 0% Garcia¹¹⁾ 11 0%, 0%, Grubl 0%, Delaunay⁷⁾ 7 0% . CLS stem 1.8% , Robin
 Tapered wedge blasted stem Schreiner²⁴⁾ 9 , 2.7%



Fig. 1. Examples of grit blasted cementless stem, Zweymuller stem(left) and CLS stem(right).

²²⁾, Schramn ²³⁾, Lee ¹⁸⁾, Min ¹⁹⁾
 0% Osteolysis Gruen 1 7
 가

apposition blasted stem 31% polished(15%), fibermetal(17%)

^{11-13, 23, 24)} press-fit fixation secondary bone apposition sec-

Tapered grit blasted wedge

coating porous 18~30% proximal coating

distal grit blasting Mallory-Head stem²¹⁾ 6%, APR- stem 가
 4.8% ²⁰⁾ , grit 가
 blasting CLS Zweymuller stem
^{6, 11, 13, 16, 22-24)} 0~3%

1 ~ 1.6%^{6, 11, 12, 24)}

5 mm 가
 1 ~ 17%^{3, 16, 23)}
 cerclage wire

(Retrieval study)
 (Animal study)

(retrieval study)

Kevin¹⁶⁾ 7 Zweymuller stem
 28%가 (bone apposition)
 Engh ⁹⁾ AML stem
 35%, Jasty ¹⁵⁾ H-G stem 24%
 , Coathup ⁴⁾ porous coating
 HA coating, grit-blasting
 HA coating 가
 bone apposition , porous coating grit blasting 가
 Goldberg ¹²⁾
 polished smooth stem, blasted stem, fibermetal stem 가 bone

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