State of the art on cementless hip resurfacing

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Abstract

The current standard fixation method in hip replacement resurfacing remains hybrid, by using a press-fit cup and cementing the femoral component. Some studies are showing satisfactory results for cementless hip resurfacing. The present review aims to review the published results up to present date.

Keywords

Hip resurfacing, cementless, bone integration.

Introduction

To date, metal-on-metal bearing with hybrid fixation like cemented femoral component and cementless acetabular fixation is the current standard in replacement surface arthroplasty (RSA). In fact, the cement provides immediate, stable and satisfactory fixation. On the other hand, the other possibility to achieve implant fixation is the use of cementless devices with porous coating. But, the bone ingrowth with cementless devices requires a minimum of six months. That explains the large preference for many authors for a cemented femoral fixation for hip resurfacing. But for young patients with conventional hip arthroplasty, it’s quite surprising to notice that many authors preferred to select uncemented stem fixation for hip resurfacing. But for young patients with conventional hip arthroplasty, it’s quite surprising to notice that many authors preferred to select uncemented stem fixation [1, 2]. This is directly correlated with the cement failure rate observed for young and active patients that led to aseptic loosening. Moreover, the cement induces thermal damage with a high risk of bone necrosis.

Main studies

Considering the fact that cement led to bone necrosis, cement failure, aseptic loosening, Gross and Liu started their own experience of second generation of cementless hip resurfacing since 8 years [3, 4]. They reported a preliminar study of 20 hips with the Cormet 2000 cementless RSA system with a mean follow-up of 7.4 years. Four revisions were noticed: two secondary to acetabular component loosening, one for infection, and the last one for unexplained groin pain. The survivorship was 100% when revision for aseptic femoral loosening was considered.

Hull et al. [5] reported a larger series of 135 cementless RSA with a mean follow-up of 3 years. No revision was observed.

Girard et al. reported on 94 cementless Conserve Plus© (Microport) devices in 90 patients (68 males and 22 females) with a mean age of 41.1 years (18-59). The mean follow-up was 1.1 years. No revision was performed. The global survivorship rate was 100%, and the cementless femoral component survival rate was 100% [6]. For theses authors a cementless “fit and fill” femoral-side fixation, which seems to be potentially evolved and design-related, should be considered for future hip-resurfacing device generations.

Lilikakis et al. [7] performed a radiological and clinical analysis of 70 cementless Cormet series with a mean follow-
up of 28.5 months (24-37.8). No cases of femoral loosening were observed. One acetabular cup revision was performed for aseptic loosening and another one for infection. The global survivorship rate was 97.1%, and the cementless femoral component survival rate was 98.6%.

Conclusions

In conclusion, the literature highlighted the fact that all cementless femoral components for RSA have achieved excellent clinical results and survivorship but a longer follow-up is required to assess the potential superiority of cementless designs over cemented devices.

References


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Conflicts of interest statement

The author declares no conflict of interest related to the publication of this manuscript

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