

Minimally Invasive Cemented Total Hip Replacement

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❖ Abstract ❖

While Minimally Invasive (incision size < 10 cm) Uncemented Total Hip Replacement is a well documented and accepted procedure there are few reports on Minimally Invasive Cemented Total Hip Replacement.

Cementing the acetabulum through a minimal approach is technically demanding, Instrumentation developed for this approach is at present for uncemented hips only. Conventional cemented acetabular cup introducers are too bulky to allow insertion via the smaller access. This study aims to show that a cemented acetabulum can be done in an accurate and reproducible manner through a minimal approach.

The author has been doing uncemented and cemented Minimally Invasive Total Hip Replacements since 2001. The first 75 cases of Minimally Invasive Cemented Total Hip Replacements is presented

Materials and Method

I now do most hips by minimally invasive single incision technique using a 7 to 10 cm incision: preferring uncemented hips. I use Cemented hips in my practice in the following situations-

Cost is a factor

Elderly with life expectancy less than 15 years.

While selecting cases for a minimally invasive approach the exclusion criteria used were

Obese patient

Complicated THR

Bone grafting or reconstruction required

73 patients (40 female, 33 male) from age 66 to 88 years with the following indications underwent 75 minimally invasive cemented hip replacements. 2 female patients had bilateral hip replacement.

Trauma	33	OA	4
AVN	19	Dysplastic	2
RA	17		

The number of AVN or Rheumatoid Arthritis cases is less as uncemented acetabulum is preferred for these.

Technique

The Anterolateral (modified Hardinge) was used in 24 hips. Posterior approach was used in 51 hips. Anterolateral approach was used till an angled reamer was acquired. Today posterior approach preferred unless patient is high risk for dislocation.

With the patient in lateral position a 9 to 10 cm (a smaller incision can be used for the uncemented acetabulum) is taken. A L shaped capsular incision is taken preserving capsule for later closure. Special retractors (Fig. 1) are used to expose the acetabulum. For a cemented acetabulum better peripheral visualization is required. This is done by elevating or releasing capsule from the acetabular rim. The acetabulum is reamed using an angled reamer (Fig 2). Special cup insertors and pushers (Fig.3) are used for cup positioning and pressurization during acetabular insertion. Femoral stem insertion is similar to the routine technique used.



Figure 1 : Special instruments



Figure 2 : Angled reamer

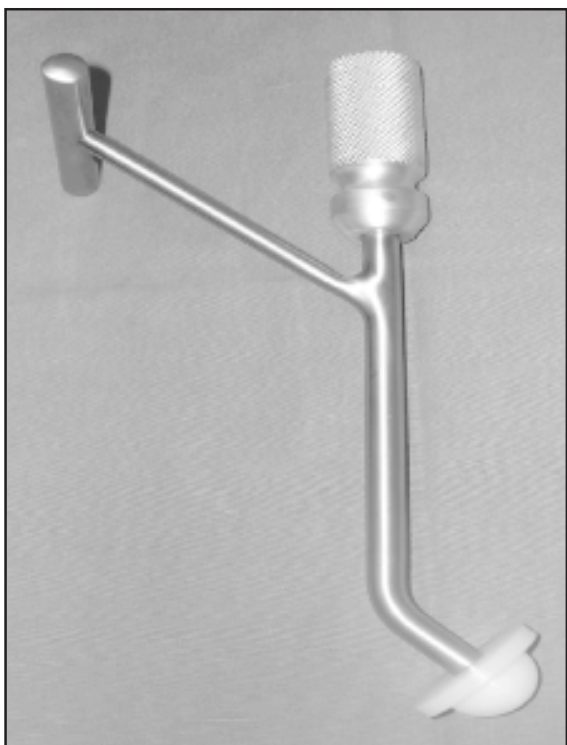


Figure 3 : Angled cup pusher

During closure the capsule and gluteus was infiltrated with .125% sensorcaine.

All patients were mobilized within 24 hours.

Post operative XRays were analysed for implant position and cement mantle.

Results

Post operative blood transfusion was considerably reduced.

0 units 64, 1 unit 9, 2 units 2

Except one patient all patients requiring blood were preoperatively anemic.

Hospital stay was 4 to 7 days Criteria for discharge being no fever, active SLR & walking adequately.

Femoral stem was in varus in 1 hip. The acetabulum position was between 35° to 50° in all cases. Cement mantle analysed for uniformity, thickness, & penetration was adequate in all cases. There was cement extrusion inferomedially below the acetabulum in 2 cases.

One patient had a dislocation. There was no infection, clinical thromboembolism or nerve palsy.

Discussion

Reports of Minimally Invasive Total Hip Replacement are largely about Uncemented prosthesis. There are few reports entailing cemented prosthesis.

Minimally invasive THR is a suitable procedure in selected cases with the advantages of reduced blood loss, reduced pain, reduced dislocation, faster mobilisation & shorter hospital stay.

It should be done only if it is consistently reproducible & the life of the implant is not compromised. The advantages of minimal exposure cannot justify an inferior final result. This is especially important for the cemented cup which is requires better exposure and is technically more demending. It is possible to achieve this in a Cemented Total Hip Replacement with a minimal approach.

