THOMPSON™
HEMI HIP STEM

This publication is not intended for distribution in the USA.

SURGICAL TECHNIQUE
INTRODUCTION

The THOMPSON™ Hemiarthroplasty was first reported in the mainstream orthopaedic literature in 1954. Since its introduction, this prosthesis has remained a popular implant in the management of hip fractures. It was originally designed as an uncemented implant, preceding the use of polymethylmethacrylate in hip surgery.

One of the strengths of this implant is its simplicity. Using modern uncemented techniques, involving the compaction of cancellous bone, means reproducible outcomes can be achieved across a wide range of surgical experience.

It also enables a faster operation for the medically unfit patient.

The indications for the use of the THOMPSON Hemiarthroplasty have changed very little since it was first described. Its main usage is for patients with an intracapsular femoral neck fracture with whom internal fixation is not indicated and have limited mobility and life expectancy due to pre-existing comorbidities.

The procedure is considered most successful in older patients and in younger patients THA may be a better option.

Hemi-hip arthroplasty is indicated in the following conditions:

- Acute fracture of the femoral head or neck that cannot be appropriately reduced and treated with internal fixation.
- Fracture dislocation of the hip that cannot be appropriately reduced and treated with internal fixation.
- Avascular necrosis of the femoral head.
- Non-union of femoral neck fractures.
- Certain high subcapital and femoral neck fractures in the elderly.
- Degenerative arthritis involving only the femoral head in which the acetabulum does not require replacement.
- Pathology involving only the femoral head/neck and/or proximal femur that can be adequately treated by hemi-hip arthroplasty.

Figure 1. Post-operative AP X-ray

Figure 2. Post-operative ML X-ray
Pre-operative templating

Although the standard THOMPSON Hemiarthroplasty is a monoblock with fixed neck length and offset, pre-operative templating remains an essential part of the peri-operative process. Using either digital or conventional x-rays (Figure 3) one should first exclude occult distal fracture extension. The next stage is to check the medial lateral diameter to ensure the component will not be too tight thus risking fracture during introduction of the real thing.

Surgical Approach

The affected hip may be approached through any conventional surgical approach.

Femoral Neck Cut

Once the hip has been adequately exposed, the femoral neck cut is made.

The THOMPSON Hemiarthroplasty is designed to be a calcar bearing prosthesis. The neck cut is therefore made at the level of the lesser trochanter at 55° (Figure 5). For ease of reference the authors use the intertrochanteric ridge as a guide.

Once the correct neck cut has been made, the femoral head can be explanted. Take care during this process not to penetrate the femoral head with the cork screw damaging the acetabulum or lever on the proximal femur as this may result in iatrogenic fracture of the greater trochanter.
Implant Sizing

Using an appropriate instrument, the femoral head is then measured to calculate accurate implant size (Figure 6). Remember, if too large, equatorial contact occurs, resulting in a tight joint with a decreased motion and increased torque force on stem from acetabular pinch pressure, resulting in early wear and stem loosening; whereas if too small, polar contact occurs with increased stress over reduced area; leads to erosion, superomedial prosthetic migration and pain.

Femoral Canal Entry

The femoral canal is identified with a straight blunt instrument (Figure 7). The aim of this step is to identify the direction of the femoral canal without removing bone stock and prevent cortical penetration by implant.

Trial Prosthesis/Bone Compaction

Once the femoral canal has been identified, a trial prosthesis is then partially inserted to compact the cancellous bone in accordance with modern uncemented techniques; this also helps to confirm that the real prosthesis is not too tight. The trial stem should be introduced to within about 1 inch of the calcar in appropriate anteversion (Figure 8).

NOTE: Any adjustment to neck osteotomy angle can be made at this stage using the trial implant as a further guide.
Definitive Component Insertion

The definitive THOMPSON Hemiarthroplasty is then cautiously introduced until the collar is seated satisfactorily on the calcar (Figure 9). Once fully seated it should be checked for primary stability. A cemented THOMPSON Hemiarthroplasty is indicated if the uncemented prosthesis was unstable, if there was an intra-operative fracture, or in cases of previously undiagnosed metastatic disease.

**NOTE:** If a cemented THOMPSON is used, please follow guidelines of your cement supplier and be aware of local guidelines for use of hemi-arthroplasty products.

Post Relocation Checks

The hip is then relocated taking care to avoid undue rotational force to the femur (Figure 10).

Routine tests for stability should be undertaken and a concentric reduction without soft tissue interposition confirmed. The capsule should then be repaired and routine closure undertaken.
ORDERING INFORMATION

THOMPSON Moore Stems IFU-0902-00-701 Identify Surgeon

963651000  THOMPSON Titanium Monobloc Hemi Hip 40 mm
963652000  THOMPSON Titanium Monobloc Hemi Hip 41 mm
963661000  THOMPSON Titanium Monobloc Hemi Hip 42 mm
963662000  THOMPSON Titanium Monobloc Hemi Hip 43 mm
963668000  THOMPSON Titanium Monobloc Hemi Hip 44 mm
963675000  THOMPSON Titanium Monobloc Hemi Hip 45 mm
963676000  THOMPSON Titanium Monobloc Hemi Hip 46 mm
963680000  THOMPSON Titanium Monobloc Hemi Hip 47 mm
963682000  THOMPSON Titanium Monobloc Hemi Hip 48 mm
963683000  THOMPSON Titanium Monobloc Hemi Hip 49 mm
963689000  THOMPSON Titanium Monobloc Hemi Hip 50 mm
963690000  THOMPSON Titanium Monobloc Hemi Hip 51 mm
963696000  THOMPSON Titanium Monobloc Hemi Hip 52 mm
963697000  THOMPSON Titanium Monobloc Hemi Hip 53 mm
963702000  THOMPSON Titanium Monobloc Hemi Hip 54 mm

Core Instrumentation

TP30001X  THOMPSON Modular Template
66339  THOMPSON Rasp
975190000  Neck Resection Caliper
References