**Design Rationale And Early Clinical/Surgical Observations With A Tissue Sparing Stem For THA In Osteoarthritis**

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**Purpose:**

Total hip arthroplasty is one of the most effective orthopaedic procedures with a very high success rate as measured by pain relief, improved function and patient satisfaction. However, since the introduction of total hip arthroplasty in the 1940s, a range of design philosophies for femoral components have demonstrated variable clinical results. Aseptic loosening, joint dislocation, thigh pain, bone resorption and femoral component failure have been some of the complications that plague this procedure.¹ The past few years has seen an influx of so-called short stems with very little clarification as to design features, required surgical technique and long-term clinical outcomes. Most devices, meet with some learning curve and most systems do little in the way of warning new surgeons as to the perils and pitfalls during the initial surgical phase. This paper is designed to review the lessons learned during the first year of surgical experience with a new neck stabilized implant stem.¹,²,³

**Why the need for a new design concept?**

- Concerns with retrievability and conversion for revisions
- Concerns with rising health care cost
- Concerns with hip resurfacing (Decreasing indications)

**Discussion:**

There is a short learning curve for the surgeon (2-3 cases) and an easy transition for the OR surgical team with only one pan of instruments. Survey of our TSI members clearly demonstrates that the majority of surgeons feel that there is reduced surgical time resulting in less blood loss, shorter hospital stay and quicker rehab back to full weight bearing and return to full active life style than compared to their standard cementless THA. A few surgeons feel the short neck sparing stem is equivalent to their conventional stems however no one feels that this approach is less than equivalent to conventional cementless THA.

**Results:**

1,253 ABC™ Tissue Sparing Stems implanted since April 2010 by 25 TSI™ Surgeon Members with direct follow up with the lead clinical / surgical team. Typical patient profile showed two-thirds being female with an age range being between 17 to early 90s. 90% were treated for OA.

**Examples of failures of conventional THA**

- Hips fail for a number of reasons:²,³,⁴
  - Loosening of the hip replacement
  - Infection of the hip replacement
  - Dislocation of the hip
  - Breakage or wearing out of the implant
  - Damage to the surrounding bone (periprosthetic fracture)

**Methods:**

- All were implanted with cementless acetabular components of four different designs and four different bearing surfaces. Intraperative x-rays were taken on all patients undergoing the posterior approach and half of all anterior approach patients had intraoperative fluoroscopy or plain x-rays taken.
- FEA studies were evaluated to determine best stem orientation and instrumentation designed and developed for surgical preparation of femoral stem.

**Reference:**