

Short-term Benefit Found for Anterior Hip Replacement

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SAN DIEGO — The direct anterior approach to total hip replacement might lead to a faster return to mobility than the posterior approach, results from a head-to-head comparison suggest.

In particular, "patients who are young and active and need to get back to work and their life quicker may benefit from the anterior approach," said investigator Michael Taunton, MD, from the Mayo Clinic in Rochester, Minnesota.

The anterior approach has been around as long as there have been total hip replacements, but the posterior approach has been dominant for the past 30 years, largely because it is easier and more versatile. "You can do acetabular or femoral reconstruction with that approach," Dr Taunton told *Medscape Medical News*.

But advances in implants, operating tables, and techniques have lessened the technical demands of the anterior approach, he explained. And advocates have argued that the anterior approach eliminates damage to muscles.

With the posterior approach, the gluteus maximus muscle is cut and the external rotator muscles are removed from the posterior femur. This process is required even with the mini-posterior approach, in which incisions are smaller than in they are with the conventional approach.

With the anterior approach, surgeons operate between the tensor fasciae latae and the sartorius muscles; no muscles are cut. "You go directly down to the hip joint from there," said Dr Taunton.

Experts have debated how much difference this makes for patients, so Dr Taunton and his colleagues conducted a comparison of the two procedures. He presented the results here at the American Academy of Orthopaedic Surgeons 2017 Annual Meeting.

In their study, 52 patients underwent anterior surgery, performed by Dr Taunton, and 49 patients underwent mini-posterior surgery, performed by one

of three of his colleagues. The two groups were well matched, Dr Taunton reported.

All patients had unilateral osteoarthritis. None had a proximal femoral deformity, inflammatory arthritis, or neurologic disorder, and none had undergone previous hip surgery. Mean age was 64 years and mean body mass index (BMI) was 31 kg/m² (no BMI exceeded 40 kg/m²).

Recovery was overseen by the surgeon to whom the patient was initially referred, who was not necessarily the operating surgeon. All patients received the same multimodal perioperative pain protocol and standardized physical therapy.

During recovery, each patient wore five activity monitors to measure acceleration at different anatomic locations, kept a diary of significant milestones, and completed questionnaires.

With the anterior procedure, less morphine was needed, ratings of pain were lower, and distance walked during the first walking session with a physical therapist was farther than with the posterior procedure. Radiographic parameters and complications were comparable between the two groups.

Table 1. In-Hospital Recovery After Total Hip Replacement

Outcome Measure	Direct Anterior Approach	Mini-Posterior Approach	P Value
Length of hospital stay	55 h	60 h	.17
Morphine equivalents	100 mg	144 mg	.01
Visual analog scale pain rating	2.1	3.1	.0002
Physical therapy walking			
Session 1	100 ft	67 ft	.02

Session 2	151 ft	120 ft	.07
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"Not only did the anterior patients walk more, by about 1800 steps a day, but the quality of the gait was better," said Dr Taunton. This difference faded after a few months.

In addition, mobility milestones were reached sooner with the anterior approach.

Table 2. Days to Attain Functional Milestones

Milestone	Direct Anterior Approach, Days	Mini-Posterior Approach, Days	P Value
Use of walker	10.0	14.5	.01
Use of any gait aid	18.0	23.0	.04
Use of narcotics	9.0	14.0	.05
Time to ascend stairs	5.0	10.0	<.01
Time to walk 6 blocks	20.5	26.0	.05

After 2 months, scores on the 12-item Short-Form Health Survey were higher in the anterior group than in the posterior group. However, this difference had faded at 12 months, and there was no statistically significant difference in the Hip Disability and Osteoarthritis Outcome Score.

"I think there are enough data to say that, in expert hands, the anterior approach affords a slight improvement in early functional recovery with no increase in complications," said Dr Taunton.

I don't think we're at the point where we want to apply the anterior approach to every patient and every surgeon.

These findings correspond with what many surgeons have noticed in their own practices, said session moderator Alexander Gordon, MD, an orthopedic surgeon from the Chicago area.

But that does not mean that the posterior approach should be abandoned, he told *Medscape Medical News*. The surgeons in the study were extremely experienced in the approaches they used, he pointed out.

"I don't think we're at the point where we want to apply the anterior approach to every patient and every surgeon," he said.

"In my own practice, I get more concerned about complications with obese patients and patients with medical comorbidities. I might do high-risk patients with the posterior approach because if they do have complications, in my hands, they are easier to handle," Dr Gordon reported.

Dr Taunton said that he, too, uses the posterior approach in obese and elderly patients. And he emphasized the need for thorough training in the anterior approach. "I can't say that there is no learning curve," he said.

In addition, longer-term studies are needed to determine whether one approach is more likely to lead to dislocations, he noted.

Dr Taunton is a consultant for DJO Global. Dr Gordon has disclosed no relevant financial relationships.

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