Gluteus maximus transfer for abductor deficiency in total hip arthroplasty

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Clinical Problem

- Chronic avulsion or inflammatory destruction of the abductor portions of the gluteus medius and gluteus minimus muscles in association with total hip arthroplasty causes severe limp and often instability.
- This study describes a reconstruction technique using the gluteus maximus to substitute for abductor muscle loss and capsular deficiency, and reviews the clinical results of the technique in 11 patients.

Methods and Treatment

- Eleven hips (11 patients) with complete loss of abductor attachment had repair and reconstruction during total hip arthroplasty or later as a secondary procedure, and were followed for 16–42 months.
- Preoperatively all patients had abductor lurch, positive Trendelenburg sign, and no abduction of the hip against gravity.
- To treat abductor deficiency, the anterior half of the gluteus maximus muscle is transferred to the greater trochanter and sutured under the vastus lateralis.
- A separate posterior flap is passed under the primary flap to substitute for the gluteus minimus and capsule.
- Suturing in abduction and VY repair of the gluteus maximus is done to ensure tight repair.

Results

- By 18 months postoperatively 9 hips (9 patients) had strong abduction of the hip against gravity, no abductor lurch, and negative Trendelenburg sign.
- One hip (1 patient) has weak abduction against gravity, negative Trendelenburg sign, and slight abductor lurch.
- One hip (1 patient) failed to achieve strong abduction, had severe limp after 6 months of careful protection and physical therapy, and was lost to follow-up.

Conclusions

- Surgical technique is important, but gluteus maximus transfer can restore abductor function in total hip arthroplasty with a high success rate.