The Journal of
Maharashtra Orthopaedic Association
September / December - 2006

Preservation of Abductors in Anterolateral Approach to Hip

Dr. Darius F. Soonawalla MS, FRCS, DNBE, DORTH.
Consultant Orthopaedic Surgeon
Breach Candy & Jaslok Hospital

❖ Abstract ❖

Abductor lurch is a well recognized complication of the Anterolateral approach (Hardinge approach or its modifications) to the Hip. This is related to invasion of the abductors as well as damage to the Inferior branch of Superior gluteal nerve. This study aims to find out if a stitch taken through the abductors 5 cm proximal to the tip of the greater trochanter reduces this complication

Materials and Method

50 patients undergoing the anterolateral approach to the hip for a Total or Bipolar Hip Replacement were randomly divided into 2 equal groups. Group 1 had the standard approach, while group 2 had the standard approach with an additional gluteal stitch as described below. Only patients with unilateral hip pathology were included.

Operative Technique

With the patient in lateral position posteriorly curved incison between 8 to 10 cm centered over the greater trochanter is taken. The fascia lata and gluteus maximus fibres are divided in line with the incison. The trochanter with the abductors (Gluteus medius and maximus) are exposed. The anterior 1/3 of the abductors are split in line with the fibres and their insertion into the trochanter is raised from bone by sharp dissection in line with the split extending distally to the vastus lateralis. This exposes the hip capsule which can then be incised.

No more than 1/3 of the abductors should be raised to preserve abductor function. The split in the muscle should not extend more than 5 cm proximal to the tip of the trochanter to avoid damage to their nerve supply (the Inferior branch of Superior gluteal

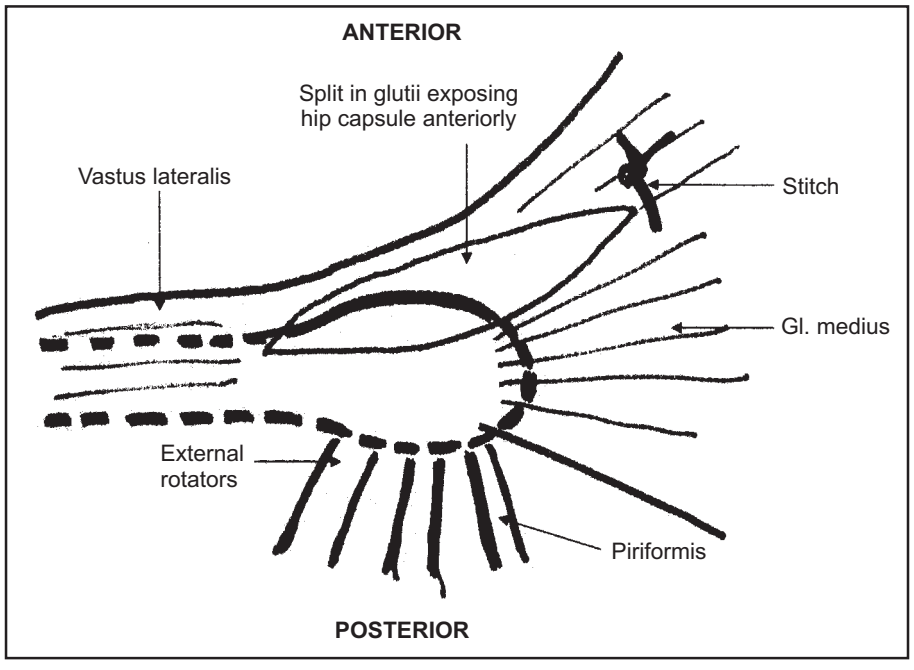

Fig. 1

nerve). Patients in group 2 had in addition a stitch of 1 no vicryl placed at 90° to the split and 5 cm proximal to the tip of the trochanter (Fig. 1). The aim of this stitch is to prevent extension of the split during retraction causing injury to the gluteal nerve.

The patients were then analysed postoperatively for abductor power, abductor lurch and Trendelenburg test at one minute. This was done at 1,3,6,12 and 25 weeks postoperatively. Abductor power was measured in the lateral position with ability to abduct against measured resistance. This was recorded as a percent compared to the normal side. Lurch was recorded as either present or absent. For delayed Trendelenburg test the patient was asked to stand on the affected limb for 1 minute and the result was recorded as either present or absent.

Results

	Postoperative period in wks	1	3	6	12	25
Gp. 1	Abductor power (Average % of contralateral leg)	15	36	58	87	92
	Abductor lurch (% of Gp. 1 with +ve lurch)	100	92	76	32	12
	Trendelenburg test (% of Gp. 1 with +ve test)	100	88	64	24	04
Gp. 2	Abductor power (Average % of contralateral leg)	18	48	79	91	94
	Abductor lurch (% of Gp. 2 with +ve lurch)	100	80	52	24	12
	Trendelenburg test (% of Gp. 2 with +ve test)	96	76	44	20	00

Patients in group 2 had better abductor power at all times, but the difference was minimal in the 1st and 25th week. All patients had abductor lurch at 1 week and 3 patients in both groups had abductor lurch at 25 weeks. The incidence of abductor lurch in group 2 was better at 3, 6 and 12 weeks. The incidence of a positive Trendelenburg test was higher in group 1 at all times but difference was marked from 3 and 6 weeks.

Discussion

hi the anterolateral approach to the hip joint the Gluteus medius and minimus are split and elevated off the trochanter to visualize the capsule. A common complication of this approach is abductor lurch. This is due to damage of the abductors (Gluteus medius and minimus) by their elevation as well as damage to their nerve supply (the inferior branch of the superior gluteal nerve). The nerve passes approximately 5 cm cranial to the tip of the greater trochanter where it is indirectly damaged during retraction. Methods to minimize this complication include elevating no more than the anterior 1/3 of the gluteus medius and limiting the split in the muscles to 5 cm from the tip of the trochanter. During retraction the split in the glutei often inadvertently extends causing damage to the nerve. A stitch taken through the gluteii, 5 cm from the tip of the greater trochanter will prevent extension of the split and thus minimize damage to the the inferior branch of the superior gluteal nerve.

Conclusion

A stitch taken through the glutei as described improved abductor power and lurch in the early post operative period (3 to 12 weeks). At 25 weeks there was no difference in the two groups. While this stitch had no impact on the final outcome it resulted in a faster recovery and better gait during the early postoperative period.

❋❋❋