



The outside-in subcutaneous arthroscopically assisted lateral retinacular release : A new technique

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Arthroscopic lateral retinacular release in the knee has been used extensively for the treatment of patellar pain and instability. The release can be performed using a number of techniques, but achieving access to the retinaculum can often be difficult, particularly in obese patients. We describe a simple modification of an arthroscopically assisted method, which utilises electro-surgery through a subcutaneous channel to perform an outside-in release.

Keywords : knee ; lateral retinacular release ; outside-in ; arthroscopic.

INTRODUCTION

Lateral retinacular release (LRR) has become a commonplace procedure in the management of patellofemoral symptoms secondary to a tight lateral retinaculum. This may result in localised pain, patellar instability, or a combination of both. The ideal candidate for LRR would have failed a trial of non-operative management and demonstrate decreased medial patella glide (25% patella width or less), and decreased passive patellar tilt (the transverse axis of the patella cannot be elevated beyond the horizontal) (1).

TECHNIQUE

Whilst most arthroscopic lateral release techniques rely on the instrumentation being placed intra-articularly we propose a new method, not

previously reported, where an outside-in technique is used.

In this technique a blunt arthroscopic obturator is used to create a subcutaneous channel from the anterolateral arthroscopy portal (fig 1). It is extended proximally in the line of the intended LRR. A 'lateral release angled' electro-surgery electrode (Kalttec Pty Ltd, Edwardstown, Australia) is then advanced along this channel. At the desired level, and under direct arthroscopic visualisation from either the anterolateral or superolateral portal, it is penetrated into the joint cavity (fig 2). The LRR is then performed in an outside-in manner, from proximal to distal.

We have found our technique to provide easy access to the retinaculum without compromising the advantages of either electro-surgery or arthroscopic assistance. Although a tourniquet is applied

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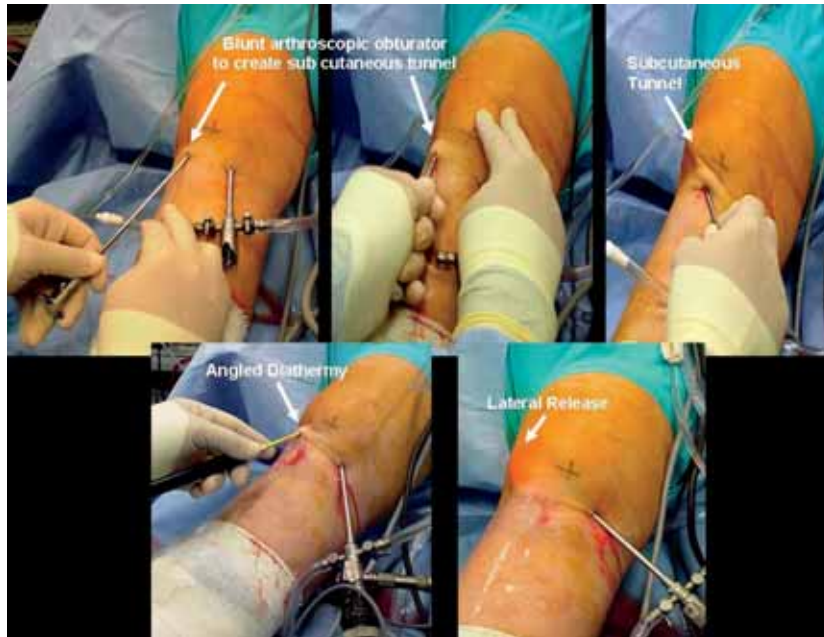


Fig. 1. — Pictures showing creation of subcutaneous tunnel



Fig. 2. — Arthroscopic views of electrocautery electrode introduced into the left knee from a subcutaneous channel

it is not inflated unless excessive haemorrhage is encountered. Any obvious bleeding points can be easily cauterised during the procedure. We have experienced no complications using this new technique.

DISCUSSION

It has been suggested that a successful outcome following LRR is more likely in a knee with isolated patellar tilt, as determined by CT imaging, with-

out significant osteoarthritic change (8). Direct comparison of reports documenting outcome following LRR is difficult due to differences in patient selection and in the methods of clinical and radiographic evaluation. This difficulty is confounded by the lack of a widely accepted classification system for patellar pain syndromes. Successful outcome, including all indications, can range from 14 to 100% (2-7, 9-20), but on average 73% of cases will be satisfactory (1).

The method used to perform LRR can be open or arthroscopic, utilising a scalpel, scissors or electro-surgery. Our previous preferred method had been to use an all-inside arthroscopic approach using an angled electro-surgery electrode. This avoids the scar of an open approach, and usually allows direct visualisation of the retinaculum. Inflation of a tourniquet is avoided and electro-surgery allows for simultaneous coagulation of bleeding points, in particular the superior lateral genicular artery (1).

However, when using this technique, access to the retinaculum can be difficult in certain patients, particularly the obese, and damage to both the arthroscope and electro-surgical instrument can occur. Access to the joint space via a subcutaneous tunnel can avoid these difficulties. A similar technique has been previously described (15); however, in it Metzenbaum scissors are utilised to perform the LRR, with one scissor blade in a subcutaneous channel and the other in the joint.

We have used this new outside-in arthroscopic technique for several years and found it to be easy, safe and reproducible. It offers all the advantages of an electro-surgical technique whilst still providing easy access to the lateral retinaculum achieved by previously documented techniques.

REFERENCES

1. Aglietti P, Buzzi R, Insall JN. Disorders of the patellofemoral joint. In: Insall JN, Windsor RE, Scott N, Kelly MA, Aglietti P (eds). *Surgery of the Knee*. Churchill Livingstone, 1993, pp 241-385.
2. Aglietti P, Pisaneschi A, Buzzi R *et al*. Arthroscopic lateral release for patellar pain or instability. *Arthroscopy* 1989; 5 : 176-183.
3. Bray RC, Roth JH, Jacobsen RP. Arthroscopic lateral release for anterior knee pain : a study comparing patients who are claiming worker's compensation and those who are not. *Arthroscopy* 1987; 3 : 237-247.
4. Ceder LC, Larson RL. Z-plasty lateral retinacular release for the treatment of patellar compression syndrome. *Clin Orthop* 1979; 144 : 110-113.
5. Christensen F, Soballe K, Snerum L. Treatment of chondromalacia patellae by lateral retinacular release of the patella. *Clin Orthop* 1988; 234 : 145-147.
6. Dzioba RB. Diagnostic arthroscopy and longitudinal open lateral release ; a four year follow-up study to determine predictors of surgical outcome. *Am J Sports Med* 1990; 18 : 343-348.
7. Ficat P, Hungerford DS. *Disorders of the Patellofemoral Joint*. Williams & Wilkins, Baltimore, 1977.
8. Fulkerson JP, Shea KP. Disorders of patello-femoral alignment. *J Bone Joint Surg* 1990; 72-A : 1424-1429.
9. Gecha SR, Torg JS. Clinical prognosticators for the efficacy of retinacular release surgery to treat patello-femoral pain. *Clin Orthop* 1990; 253 : 203-208.
10. Grana WA, Hinkley B, Hollingsworth S. Arthroscopic evaluation and treatment of patellar malalignment. *Clin Orthop* 1984; 186 : 122-128.
11. Harwin SF, Stern RE. Subcutaneous lateral retinacular release for chondromalacia patellae : a preliminary report. *Clin Orthop* 1981; 156 : 207-210.
12. Johnson RP. Lateral facet syndrome of the patella : lateral restraint analysis and use of lateral resection. *Clin Orthop* 1989; 238 : 148-158.
13. Krompinger WJ, Fulkerson P. Lateral retinacular release for intractable lateral retinacular pain. *Clin Orthop* 1983; 179 : 191-193.
14. Larson RL, Cabaud HE, Slocum DD *et al*. The patellar compression syndrome : surgical treatment by lateral retinacular release. *Clin Orthop* 1978; 134 : 158-167.
15. Metcalf RW. An arthroscopic method for lateral release of subluxating or dislocating patella. *Clin Orthop* 1982; 167 : 9-18.
16. Micheli LJ, Stanitski CL. Lateral retinacular release. *Am J Sports Med* 1981; 9 : 330-336.
17. Ogilvie-Harris DJ, Jackson RW. The arthroscopic treatment of chondromalacia patellae. *J Bone Joint Surg* 1984; 66-B : 660-665.
18. Osborne AH, Fulford PC. Lateral release for chondromalacia patellae. *J Bone Joint Surg* 1982; 64-B : 202-205.
19. Schonholtz GJ, Zahn MG, Magee CM. Lateral retinacular release of the patella. *Arthroscopy* 1987; 3 : 269-272.
20. Simpson LA, Barrett JP. Factors associated with poor results following arthroscopic subcutaneous lateral retinacular release. *Clin Orthop* 1984; 186 : 165-171.