Orthopaedics & Traumatology: Surgery & Research (2012) **98**, 167—172

Available online at
SciVerse ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com/en

ORIGINAL ARTICLE

Medial facet patelloplasty in patellar instability associated with patellofemoral dysplasia: A report of 26 cases

D. Saragaglia*, R. Mader, M. Blaysat, N. Mercier

Academic Department of Orthopaedic Surgery and Sports Trauma, CHU de Grenoble Teaching Hospital Center, South district Hospital, avenue de Kimberley, BP 338, 38434 Échirolles cedex, France

Accepted: 10 October 2011

KEYWORDS
Patella;
Instability;
Patelloplasty;
Medial facet;
Dysplasia

Summary
Introduction: Numerous procedures may be used in the surgical treatment of patellar instability. We have noticed that certain types of patellar instability result in a bulge (or protrusion) of the distal medial facet of the patella which can hinder recentering in the trochlear groove.
Hypothesis: In certain patellofemoral dysplasias, trimming down of this bulge (patelloplasty) as long as it is associated with a ''à la carte surgery'' program, can improve stability, centering and lateral patellar tilt.
Patients and methods: This retrospective series included 23 patients (26 knees), 13 women and 10 men, mean age 25.9 ± 9.01 years old (15—52) operated between 1997—2008. Patellar dislocation had occurred at least once in all knees, and at least twice in 16 knees. The mean preoperative Kujala score was 79.1 ± 6.1 points (68—91). There was a bulge on the medial facet of the patella in all cases, in particular on skyline views associated with the usual criteria for patellofemoral dysplasia. Patelloplasty was associated in all cases with resection of the lateral patellar retinaculum and anteromedialization of the tibial tubercle (7 were lowered) and four Albee trochleoplasties.
Results: Recurrent dislocation occurred in one case (4.7%). Nineteen patients (22 knees) were followed up for a mean 7.53 ± 3.27 years (2—13 years). The mean postoperative Kujala score was 91.8 ± 7.9 points (70—100) and the subjective results in 19/22 (86.5%) knees were satisfactory or very satisfactory. On skyline views, 21 patellae (95.5%) were well centered and one (4.5%) still presented with lateral tilt. There was no osteoarthritis in 15 knees (68%).
Conclusion: In selected cases, patelloplasty of the medial facet of the patella has no particular morbidity at intermediate follow-up. Associated with other surgical procedures, the rate of satisfaction of patients is very high and especially encouraging.
Level of evidence: Level IV, retrospective cohort study.

* Corresponding author. Tel.: +33 4 76 76 58 33; fax: +33 4 76 76 58 18.
E-mail address: DSaragaglia@chu-grenoble.fr (D. Saragaglia).

1877-0568/$ - see front matter
doi:10.1016/j.otsr.2011.10.008

Introduction

Objective patellar instability is a frequent entity. Four main anatomical factors have been reported to favor these dislocations [1,2]: trochlear dysplasia, patella alta (high riding patella), excessive lateralization of the anterior tibial tubercle (ATT) in relation to the trochlear groove (TT-TG) and excessive patellar tilt. Among these criteria, patellofemoral incongruence is found in 85% of recurrent patellar dislocations [1]. In most cases, dysplasia of the femoral trochlea is associated with a patella with a long lateral facet and a short, or very short medial facet (Wiberg type 3) [3]. The Dejour school in Lyon [1—3] has not paid special attention to the appearance of the patella which often has an abnormal shape due to trochlear dysplasia and lateral patellar tilt. In certain cases, the patella also has a convex medial facet (or is bulged) especially distally, which is the obvious cause of incongruence during recentering whether this is from the soft tissues, or osteotomies (ATT transposition or trochleoplasty). Moreover, if patellar tilt is corrected without treating the bulge of the medial facet, this raises the lateral facet, which has no contact with the lateral side of the trochlea during surgery. The patella will inevitably return to its initial position from the action of soft tissues (during closing of the wound, for example) with medial hyperpressure caused by the tightening of the medial soft tissues or reconstruction of medial patellofemoral ligament (MPFL). This bulge (or bump) of the distal medial facet is especially visible on axial views of the patella at 30° of flexion where a double outline of the medial side can be seen, one oblique (proximal part), the other with a more or less pronounced bulge, at a nearly 90° angle to the lateral side of the patella (Figs. 1—3).

In 1997, we hypothesized that patelloplasty of the medial facet of the patella would prevent these two disadvantages. Within the framework of providing ''à la carte surgery'', we decided to perform a patelloplasty of the medial facet in case of excessive convexity of this facet. The aim of this study was to evaluate the intermediate term results of 26 medial patelloplasties performed between 1997 and 2008.

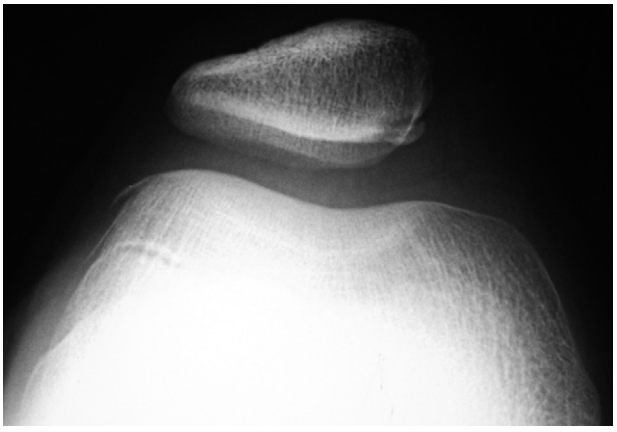

Figure 1 Wiberg 3 patella without a bulge in the medial facet.

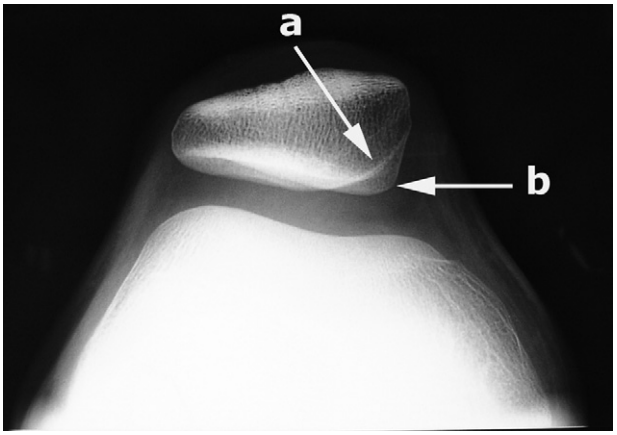

Figure 2 Patellofemoral view at 30° showing convexity of the medial facet of the patella. Note the double outline: a: corresponds to the proximal medial facet (oblique appearance) and b: to the distal part.

Patients and methods

The series

There were 23 patients (three bilateral interventions), 13 women and 10 men, mean age 25.9 ± 9.01 years (15—52). At least one dislocation had occurred in all knees and two dislocations in 16. All patients presented with pain, which increased with physical activity and was associated with a feeling of instability. Four patients had chronic swelling. The mean preoperative Kujala [4] score (Table 1) was 79.04 ± 6.07 points (68—91).

Radiologically and in particular on skyline views of the knee at between 30—45° of flexion, all had a more or less pronounced bulge (or a bump) of the medial facet of the patella (Figs. 2, 3) of between 4—8 mm, convex with a small radius or an actual bone spicule (Fig. 3). This facet created an angle of nearly 90° with the lateral side of the patella. When this anomaly was suspected on X-ray, it was always confirmed during peroperative eversion of the patella (Fig. 4). According to D. Dejour's classification [5,6], there were four type A trochleas, 12 type B, six type C and four type D. Patellar morphology was evaluated according to Wiberg's classification [7]. There were four Wiberg type 1 patellae, 12 type 2, and 10 type 3. The mean Caton and

Table 1 Summary of clinical results.

	Preoperative (26 knees)	Revision (22 knees)
Patellofemoral pain	21	8
Worse		1
Same		2
Improved		5
No pain		14
Instability (dislocation)	26	1
Hydarthrosis	4	3
Mean Kujala score	79	91