Anterior Knee pain

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Patella disorders are the most common knee complaints seen in adolescents and young adults. Research has shown an incidence as high as one in four, and even higher, among athletes. Despite this high incidence, the exact cause of these disorders remains enigmatic. Many possible mechanisms have been described by which patellofemoral pain might be initiated.The major complaint of patients with patellofemoral pain syndrome is retropatellar pain during activities such as running, squatting, going up and down stairs, cycling, and jumping. Once started, the patellofemoral pain syndrome frequently becomes a chronic problem, forcing the patient to stop sports and other similar activities.There are six major anatomic structural sources of patellofemoral pain: subchondral bone, synovium, retinaculum, skin, muscle, and nerve. These structures may be affected by many factors, including systemic disease, but in orthopaedic sports medicine, the most common reasons for anterior knee pain are overuse, patellofemoral malalignment, and trauma.The cornerstone of successful management of patellofemoral disorders is accurate diagnosis. Because the patella transmits tensile forces from the knee extensors to the tibia, the patellofemoral joint can sustain very large loads (3 to 4 times body weight with stair walking; 7 to 8 times body weight with squatting). In managing these patients a clinician must consider extremity alignment, soft tissue mobility, and dynamic control, as well as articular surface congruity. Therefore, a complete and specific history and physical examination must be performed, with particular attention to exacerbating activities and physical examination findings.Important determinants in patient history include acuity of onset, injury, pain versus instability, location of pain, exacerbating activities, and systemic involvement. Typical complaints of patellofemoral chondromalacia or arthrosis include pain with high quadriceps-loading activities, such as squatting and stair walking. Patients often describe symptoms of the knee “giving way.”In further investigating this complaint, a clinician must distinguish between patellar instability, quadriceps weakness, as well as ligamentous or cartilaginous causes of knee buckling. Physical examination should include complete musculoskeletal evaluation of the patient, including limb alignment and general signs of joint hypermobility or soft tissue laxity.Assessment of the entire lower extremity, patellofemoral anatomy and function, and specific location of symptoms, as well as provocative tests to reproduce symptoms should be performed.Standard radiographic evaluation of the knee should be performed, including weight bearing views, and especially axial patellar views (“sunrise views”) in varying degrees of flexion. On occasion, additional studies such as bone scan, magnetic resonance imaging, or computed

tomography may be indicated. It should be stressed that radiographic findings are most helpful in confirming and refining clinical impressions obtained from history and physical examination, rather than making a diagnosis.Initial nonoperative management should focus on a dedicated rehabilitation program, including stretching muscle groups and tight retinacular structures, avoiding painful activities and ranges of motion, and strengthening of dynamic patellar and knee stabilizers. The patient should be treated with oral anti-inflammatory medications as well as therapeutic modalities such as heat, massage, ultrasound, and ionto-phoresis. Orthotics, taping techniques, and bracing may also be used with good success. If operative treatment is eventually chosen, it is essential to have the correct diagnosis and to have performed an adequate course of physical therapy.Patient selection is the key, since successful surgical outcomes usually require diligence and devoted patient participation. It should be noted that most of patients with patellofemoral complaints will be treated successfully without surgical intervention. If nonoperative treatment fails, the clinician should reconsider the patient’s diagnosis and alter nonoperative treatment accordingly.Nonoperative treatment must also be closely monitored to ensure that suitable techniques are being used. A proper rehabilitation program should always include quadriceps strengthening (especially Vastus Medialis) and stretching of tight muscles and ligaments (eg, hamstrings and lateral retinaculum).Quadriceps deficiency is a fundamental problem in patellofemoral disorders, and is a negative prognosticator for recovery. Perhaps most importantly, the strengthening exercises should be performed in a pain-free arc so as to avoid exacerbation of symptoms.After a well-supervised course of nonoperative treatment has been performed unsuccessfully, surgical intervention may be considered. Many clinicians recommend 4 to 6 months of nonoperative management before surgery.