Diagnosis of patellofemoral joint disorder

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History taking

Most important step to evaluate the patient with patellofemoral joint (PFJ) disorder Duration of symptom; acute or chronic

If trauma, significant pivoting? or sudden violent quad muscle contraction ?

If recurrent symptom, OK in the adolescent?

Pain; location is mostly anterior, however, medial, lateral, popliteal, or diffuse.

Pain occurs when arising from seated position, stairs climbing, or squatting.

Careful differentiation PFJ problem from osteoarthritis, or disorders is needed.

Etiology of pain is simply patellar pain or instability.

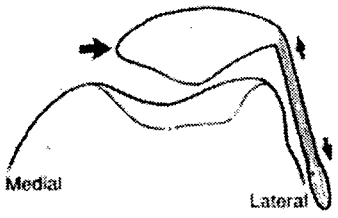
Physical examination

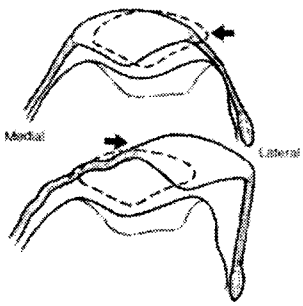
If patient complained painful swelling after minor trauma, palpate medial patello-femoral ligament

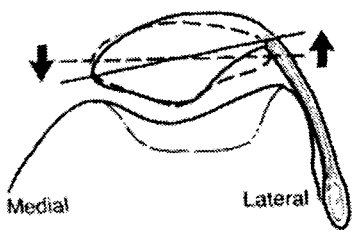
At standing, check alignment of the affected limb; genu valgum

At seating, check development of VMO by palpation and patellar motion during active extension from a flexed position; J-sign.

check patellar crepitus, patellar compression test, patellar tilt, tightness of lateral retinaculum, incompetence of medial patellofemoral ligament and Q-angle.







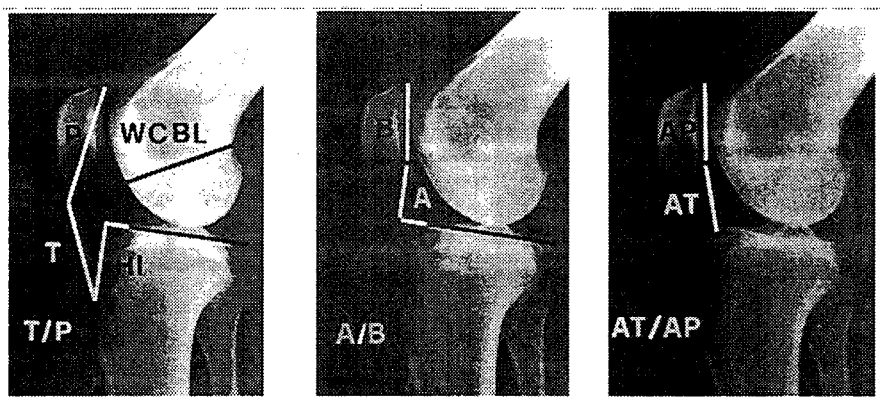
Imaging

1. plain radiographs

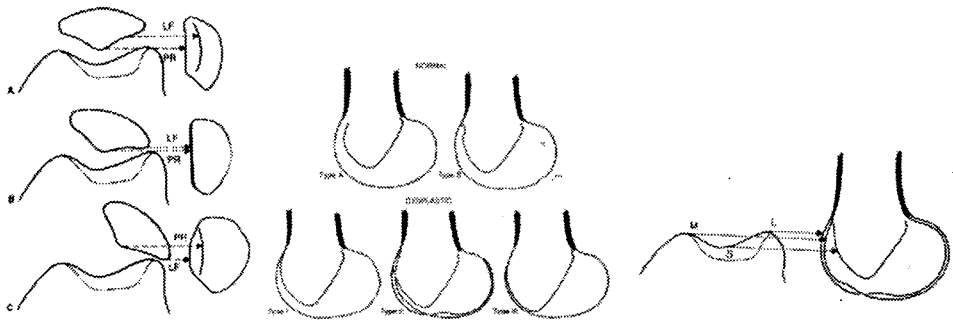
AP view; not contributory in PFJ disorders, excluding patellar alta

Lateral view; check position of patella; patellar alta, patellar baja

Insall-Salvati ratio, Blackburne-Peel ratio, Canton ratio



check tilt of patella, depth of trochlea, dysplasia of trochlea



dysplasia of proximal trochlea can be diagnosed by full extension lateral view.

Axial view; Merchant' s view is a standard view.

Check sulcus angle, congruence angle, lateral patellofemoral angle in Laurin view

> Pathologic values;
> Q-angle 〉 20 degrees
> T/P ratio 〉 1.3, A/B ratio 〉 1.2
> Sulcus angle 〉 150 degrees, congruence angle 〉 4 degrees

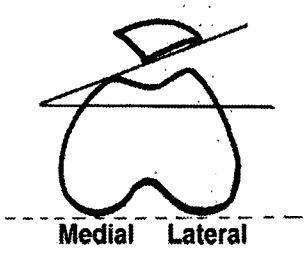
2. computed tomography

check patellofemoral relationship between full extension and 30 degrees of flexion, check the position of the tibial tuberosity relative to the trochlear groove

check tilt of the patella

subluxation; positive congruence angle beyond 10 degrees of flexion

tilt; lateral patellofemoral angle 〈 8 degrees between 0 and 30 degrees of flexion



3. radionuclide imaging

indicated when the patient' s anterior knee pain seems out of proportion to the objective physical findings to rule out reflex sympathetic dystrophy

4. magnetic resonance imaging

check condition of cartilage of the patella and trochlea

check status of the medial patellofemoral ligament, bone contusion of the trochlea and potential fracture from the patella in acute trauma