

ORTHOSPORTS

QUESTION FOR PHYSIOTHERAPISTS



QUESTION | WE HAVE RECEIVED A FEW DIFFERENT QUESTIONS ABOUT THE MANAGEMENT OF PATELLA DISLOCATION. PLEASE SEE THE ANSWERS OUTLINED BELOW:

Case History 1:

A 21 year old university student presents to you having dislocated her patella over the weekend. This happens about once a year if she goes dancing. The problem started when she was 15 years old but she was told not to have surgery at the time.

Her clinical examination shows a small effusion but she already has fairly good movement of the knee with limited pain. Her clinical examination shows generalized ligamentous laxity, internal femoral torsion and a positive patella apprehension sign. You arrange an xray to exclude an osteochondral injury. Since she has already failed to respond to non-operative treatment of splinting and physiotherapy you arrange an Orthopaedic opinion.



Normal Patella



Dislocated Patella

Patella dislocation usually results from a twisting injury or a direct blow to the knee with the joint in slight flexion. The injury is painful and may cause the patient to fall to the ground. The patella can reduce itself as the person tries to straighten their knee but more commonly is observed as a prominent bulge on the lateral margin of the knee.

When the patella dislocates the knee is swollen and neither active nor passive movement is possible. The knee is usually in a flexed position when the patient presents for acute treatment.

Patella dislocation can be caused by (1) Abnormal forces on a normal patellofemoral joint OR by (2) Normal forces on an abnormal joint. Recurrence of the dislocation without surgery is common with more than half of the patients having significant activity restrictions. Having a dislocation doubles the risk of patellofemoral arthritis over 15 years. Teenagers are 5 times more likely to dislocate their patella than adults and females are more likely to dislocate than males.

Factors that may predispose to dislocation include:

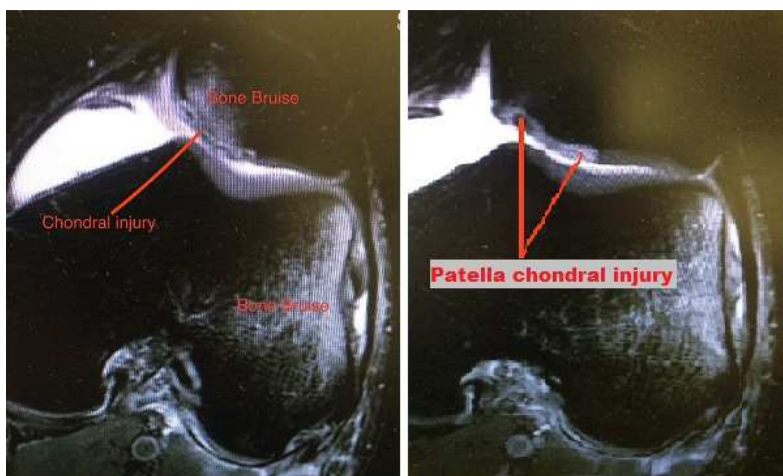
- Generalised ligamentous laxity;
- A small lateral femoral condyle (relative to opposing tibial condyle);
- A small intercondylar groove;
- A small and / or high riding patella;
- A significant genu valgum deformity;
- Quadriceps weakness but it is possible to dislocate a 'normal' patella as well.

It is usually worthwhile trying a gentle reduction maneuver for an acute dislocation since the diagnosis is usually obvious. Simply straightening out the knee and (if necessary) applying a gentle medial

force to the patella will reduce the joint and provide immediate pain relief for the patient. It is essential that all patients have an Xray including a skyline patella or Merchant view.

Once reduced the patient will usually have a haemarthrosis and be very tender at the medial edge of the patella where the soft tissue structures have torn. They will be reluctant to flex the knee and have a positive patella apprehension test. If the dislocation has taken place in an otherwise normal knee and the patient is a regular sports participant it is becoming more common to reconstruct the structures that have been torn to allow a more reliable return to sport.

If the patient leads a sedentary lifestyle I recommend immobilizing the knee in a firm supporting bandage and Zimmer splint for 3 weeks with the leg extended with full weight bearing allowed. Once the splint is removed, physiotherapy should be started immediately to strengthen the quadriceps muscles to try to prevent further dislocations. If the dislocation takes place in an abnormal knee (recurrent dislocator) it is important to work out where the pathology is that is causing the dislocation. Non-operative treatments are always attempted first but surgery is often required. On the whole surgery works well to prevent further dislocations because skeletal and muscular components of the patellofemoral joint and extensor mechanism are realigned. These days it is more common for patients to undergo a soft tissue reconstruction than a bony realignment procedure (MPFL medial patellofemoral ligament reconstruction)



MRI of knee post dislocation showing bone bruise and chondral injury

Case History Two:

A 35 year old elite volleyball player falls during a game and lands awkwardly. Her knee is bent and she is in significant pain. Your daughter is on her team so you happen to be there watching the game and go to her assistance. You examine her and find that her patella is dislocated laterally. Taking a brief history from her you find out that this is her first dislocation.

There is no neurovascular deficit at the foot and her hip is not irritable to movement. She does not have generalized ligamentous laxity or other predisposing factors for dislocation. While you are waiting for the ambulance to arrive you explain that you are going to attempt to gently straighten her knee to allow the patella to reduce itself. As you get close to full extension the patella reduces providing immediate significant pain relief.

She is now able to hobble to the sideline keeping her knee fully extended and can weight bear well enough to walk with assistance. You arrange for her to have crutches and a zimmer splint and send her for an immediate xray and to the pharmacy for some analgesic medications.

The xray shows normal bony morphology. Unfortunately high level athletes that dislocate their patella only get back to the same level of activity they were doing previously about 50% of the time. This is improved significantly by early surgical reconstruction of the MPFL if indicated. Since she is an elite athlete you refer her for an MRI scan and Orthopaedic opinion.

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