

## DEFINITION

1. **Anterior knee pain syndrome (AKPS)** is defined as a condition comprising usually of intermittent pain deep to or around the margins of the patella. It is a definite diagnosis, not a diagnosis of exclusion.

## CLINICAL MANIFESTATIONS

2. The hallmark of AKPS is **pain in the front of the knee**. There is typically no history of trauma, rather there is a gradual onset and increase in pain over several weeks.
3. The location of the pain is variable but is generally under or around the margins of the patella; sometimes the lateral retinaculum is indicated as the painful area. When asked to indicate the site of the pain the patient may cover the front of the knee with the hand (grab sign). The pain is typically burning in nature, intermittent, and made worse by exercise. Pain after exercise is usual and this may be the only time it occurs. The degree of pain varies greatly from individual to individual, and in severe cases may be extreme and constant.
4. Other clinical features include crepitus and clicking within the knee, and a feeling of instability in the knee joint, especially when descending stairs. Movement is generally not restricted. Tenderness around the patellofemoral joint is very variable and may be severe; tenderness of the lateral retinaculum is common. Swelling of the knee is not usually marked. Plain X-ray examination is usually normal, and serves to exclude bony defects, loose bodies and early degenerative change.
5. In 95% of cases AKPS responds to conservative management. Specialised physiotherapy, particularly quadriceps retraining, is the mainstay of treatment. The risk of long term sequelae is low, and importantly AKPS does not predispose to patellofemoral osteoarthritis. A small minority of cases prove refractory to treatment, with indefinite persistence of pain.

## AETIOLOGY

6. AKPS is a disorder of adolescence and young adult life, affecting both sexes. Around 25% of recruit medical discharges from the armed forces are known to be due to AKPS. It is endemic in the young military population and is also frequently encountered in the equivalent civilian population, particularly in those who aspire to sporting success. The non-specific nature of the term implies that pathogenesis of the pain is not well understood
7. In most patients with AKPS the cause is not known. The majority of patients do not have an underlying structural abnormality to account for the symptoms. The anatomical findings alone do not necessarily lead to the clinical syndrome.
8. Where **structural abnormalities** are present, they are almost always developmental, the following are the most commonly met with:
  - 8.1. Patellofemoral maltracking:

- 8.1.1. Patellar subluxation. The patella may sublux laterally and cause AKPS by increased pressure on the lateral patellofemoral joint surfaces. It is liable to affect adolescent females.
  - 8.1.2. Patellar tilt. The patella fails to lie symmetrically, usually due to tethering of the lateral soft tissues (retinaculum).
- 8.2. Malrotation. Excessive femoral anteversion and excessive tibial external rotation will both lead to increased lateralising forces on the patellofemoral joint, and thus to AKPS. This is a developmental fault.
- 8.3. Weakness of the vastus medialis oblique muscle. Knee pain develops frequently when affected individuals suddenly increase their exercise activity levels, such as during basic military training or intensive courses.
9. Trauma. Direct trauma to the patellofemoral joint is an unusual cause of AKPS. The injury involves a direct blow to the front of the knee or a fall on to the patella; even trivial injuries, or repeat microtrauma, can lead to knee pain.
10. Athletic overactivity per se, such as running or cycling, may induce AKPS in an anatomically normal knee. Overuse of the knee results in discomfort that will commonly resolve with cessation of the activity concerned.

## **CONCLUSION**

11. Pain in the front of the knee is a common affliction of teenagers and young adults. The cause is not known in most patients, but a minority have a developmental structural abnormality affecting the stability of the patellofemoral joint. AKPS does not predispose to patellofemoral osteoarthritis.

## **REFERENCES**

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