

TREATMENT IN ADULTHOOD

Most doctors will recommend conservative measures to try and control symptoms.

In adults with persistent symptoms as a result of their bipartite patella, there are two surgical treatment options.

The surgery offered depends on whether the cause is due to cartilage wear in the lateral facet of the patella or from pain due to rubbing between the fragments.



Most treatments to reverse or slow the cartilage wear involve an arthroscopy, chondroplasty of the damaged cartilage, lateral release of the patella to offload the lateral facet and removal of the smaller

superolateral fragment (red arrow).

The prognosis, if the patient has delayed treatment and the hyaline cartilage wear is extensive, is worse than if the patient has sought treatment early and the cartilage wear is minimal.

Surgical treatment of the pain from rubbing between the two fragments is just excision of the smaller fragment. If this is done carefully tendons do not need to be detached and function is rapidly restored along with resolution of symptoms in most cases.

If you have any other questions please do not hesitate to ask your Orthopaedic and Trauma surgeon.



Bipartite
Patella

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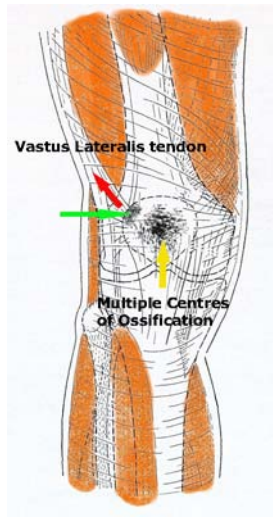
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BIPARTITE PATELLA

This is an acquired condition of childhood. It is one of the overuse injuries that happen through excessive and sustained sporting activity in children. Athletes are never born with a bipartite patella. This is a common misconception. A bipartite patella can be seen in up to 2% of the population.

The bone of the patella (knee cap) forms in cartilage of the foetal skeleton. Like most bones the patella forms from multiple centres of ossification (Ogden JA. Radiology of postnatal skeletal development. X. Patella and tibial tuberosity. Skeletal Radiol. 1984;11(4):246-57).

The process of converting the cartilage to bone begins with a centre of ossification between the ages of three and five years. Multiple ossification centres (bone formation) form in and around the patella cartilage that rapidly coalesce. As the patellar ossification



centres merge during childhood it is thought that excessive cyclic overloading by the insertion of vastus lateralis muscle into the superolateral corner of the patella (red

arrow) causes accessory ossification centres that are pulled far enough apart that they do not coalesce (green arrow). These lead to the development of a bipartite (two parts) patella and rarely the tripartite (three parts) as in the front radiograph).



Because there is a separate fragment in the superolateral portion that then grows on the patella is often larger than a normal patella (patella magna) and it is deformed in shape. It is frequently bilateral (both knees).

The bony patella expands to all cartilaginous contours during late adolescence. This is when the patella is most at risk of overuse through excessive sporting activity.

SYMPTOMS IN CHILDHOOD

Children complain of pain usually after sport. The pain is directly over the kneecap but not well localised. Swelling at the synchondrosis (join of the two fragments) is rare. There is often a painful range of motion of the knee. The condition settles and is rarely a problem until adulthood.

SYMPTOMS IN ADULTHOOD

Most are asymptomatic and found incidentally during an x-ray for another pathology. Adults

start to complain of symptoms of pain and swelling of the knee in their late 30's and 40's. The pain is directly over the smaller fragment. This is because the bipartite smaller fragment overlaps the lateral femoral condyle and causes wear of the cartilage on the lateral facet of the patella or in the trochlea groove of the femur (thighbone). Wear of the hyaline cartilage from the lateral facet of the patella eventually proceeds to osteoarthritis.

Pain is sometime due to movement between the two fragments with impingement of the two bony parts.

A radiograph confirms the diagnosis. A bone scan is rarely performed but in the non arthritic but painful bipartite patellae the bone scan shows a hot spot between the fragments where they are rubbing painfully.

A knee MRI will establish the state of the hyaline cartilage and the size of the fragment.

TREATMENT IN CHILDHOOD

In childhood, in most cases, treatment is rest and then reduction of sporting activity to the point that the symptoms do not return until skeletal maturity. The treatment of the acute phase, if there has been no wear of the patella or trochlea cartilage, is simple anti-inflammatory pain killers, physiotherapy and trials of patella taping or [patellofemoral knee braces](#).