

The painful 'big toe' joint explained - hallux limitus

Our task as clinicians is to find the why, prevent worsening and provide early treatment. Long term failure to act means the joint fails to work. Two main reasons arise: The toe is misshapen, forming a bunion OR it becomes stiff. This condition is called hallux limitus. Often called arthritis, the big toe joint rarely has arthritis, a medical disease process. Arthrosis, or degenerative changes, are more likely the reason for pain. Four conditions are considered -

- Spasm due to inflammation (repeated strain)
- Loose body (not necessarily fracture)
- Split or worn cartilage
- Excessive outgrowth of bone (spurs or osteophytes)

The condition is time delayed. An event when young (10-25) may not show up until 45-65. After exercise the problem comes to light in older age. An x-ray is reported 'arthritis'. Until a clinical specialist confirms this, the report to the GP may be wrong. The joint space is often smaller so what does this all mean?

Joint oil (synovial fluid)

The surface of the bone requires lubrication and nutrition. The oil, as I call it, makes the process work smoothly. If the fluid increases within the joint, the toe can become painful, or, if it dries out, then the surfaces scrape, causing impingement. Same thing – pain.

What causes this?

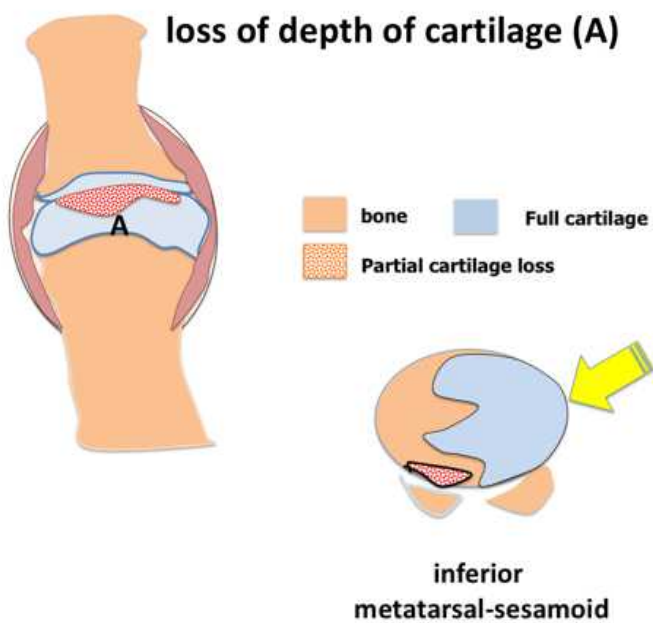
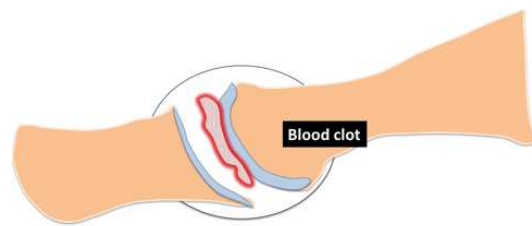
Lack of movement is the end process leading to poor lubrication, BUT, if the cartilage is split or damaged then flexibility (hydro elastic property) is lost. Cartilage must be able to deform helpfully during joint movement. Once this process disappears, the cartilage is stiff, or bone rubs on bone, the joint becomes more inflamed and fluid replacement fills with repair cells (white cells and platelets). Small clot formation acts to fill in gaps but tethers down movement further. This is where steroid injections come in. They can reverse the scar tissue (sheet 19).

Early signs can be helped

In early stages the joint has a protection mode. The muscles around the joint tighten, and go into spasm. All movement is lost at this point. The toe may reverse, get better or stay like this and worsen. An injection of steroid, or anaesthetic, can expose this as the correct diagnosis. Part of the joint, the sesamoid bone, can be involved. This ball bearing like bone jams on movement and can cause spasm (sesamoiditis) see sheets 3&4)

Bone spurs

When a joint becomes affected, with long standing inflammation, new bone forms. This will cause a spur to arise. This happens on the top of the joint and sides. These horn like projections (osteophytes) jam the joint further, and fluid lubrication stops. A big toe joint works with the ankle, knee and hip to provide smooth walking. Lack of ultimate useful movement can affect the body elsewhere. Painful toe joints may be fractured, although rare, can arise at any age. Damaged joints (arthrosis) may form loose bodies which are scar tissue generated and change into bone fragments. Again, such events cause the joint less function.



fibrinoid change



signs of arthrosis

