

Osteoarthritis of the Base of Thumb

The main joint at the base of the thumb is called the trapeziometacarpal joint (or first carpometacarpal joint). It carries a lot of force during use of the thumb yet allows complex ranges of movement including rotation, and is one of the most susceptible joints to wear, or degenerative or "osteoarthritis". This causes aching on strong pinch functions, especially pinching between the thumb and the side of the index finger (key pinch). Because it hurts to apply force, the thumb feels weak.

When the pain becomes bad enough, hand function is severely affected, and treatment is sought. The severity of the problem can be assessed by examination and x-ray. Pain may be caused by pressure or sideways angulation of the thumb, or by "grinding" the joint surfaces (gently if sore!) The posture of the thumb is important - it may fall into the side of the hand, losing the open web which allows grasp. This is more likely to happen if the next joint down the thumb is lax and can bend too far backwards (hyperextend), or sideways. X-ray shows the severity of joint damage, collapse of the height of the trapezium (the "keystone" bone on which the thumb stands), the formation of spikes and spurs of bone round the edges of the joint (osteophytes, which are painful), and the involvement of other joints beneath the trapezium, or elsewhere in the wrist or hand.

Treatment may be aimed at making the symptoms manageable in the early stages, or may involve surgical treatment if other measures fail to help enough.

The simplest form of treatment which may help a lot at first is to wear a splint to support the thumb. This must be specially made to fit the individual hand, and is thin and close fitting, leaving the rest of the hand and wrist free to move. It can be worn for rest, and also during use to allow more function without pain.

Steroid injection is often used as a form of treatment, and has its place. However, there is uncertainty about its long term effect on the joint - there may be short term gain but a long term adverse effect.

Therefore it should not be repeated endlessly, and should preferably only be used when surgical treatment is envisaged but there is need for delay.

Surgical treatment is indicated if pain persists and interferes with function. The preferred operation is trapeziectomy, in which the trapezium bone is removed. The gap that this leaves is partly obliterated by natural movement of the thumb towards the scaphoid bone in the wrist. Insertion of a soft cushion made from part of a neighbouring tendon probably helps in the formation of a new joint, and its attachment to the bone at the base of the thumb (the metacarpal) also helps provide stability as the joint heals. A splint needs to be worn to support the new joint arrangement for about 5 weeks, and a small splint can be helpful as function is regained after that. It takes 6-9 months for strength to recover, but during that time there is steady improvement. Most patients have little or no pain by that time, and reasonable strength although it is probably never as strong as the thumb was before the arthritis started. Occasionally patients have some pain for obscure mechanical reasons, or continued arthritis in other neighbouring joints.

Other operations have been introduced, including a simple osteotomy of the metacarpal (removing a small wedge of bone) to alter the pattern of force transmission across the affected joint; this is sometimes indicated in early yet painful arthritis; joint fusion, which preserves strength at the expense of mobility, and joint replacement, which promises earlier recovery of function, but to date has a higher complication rate.