CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION

Distal Radius Malunion (and Corrective Osteotomy)

What you're feeling

You broke your wrist some time ago – perhaps from a fall onto an outstretched hand – and it healed. But it has not gone back to normal. The wrist may look slightly **bent, crooked or shorter** than the other side, sometimes with a visible bump on the back. More than the look, it often does not **work** the way it used to: your **grip feels weak**, the wrist is **stiff**, and turning your palm up and down (as if turning a key or a doorknob) can be awkward or painful.

Many people notice an ache on the **little-finger side of the wrist** – the side away from the thumb – that flares with twisting, leaning on the hand, or heavier tasks. Some feel a **clunk or instability** when rotating the forearm. A few develop **pins and needles** in the thumb and fingers if the healed position crowds a nerve at the wrist. These are all signs that the bone did not heal in quite the right shape.

What's actually happening

The distal radius is the larger of the two forearm bones, on the thumb side, right at the wrist. When it breaks and then heals in a poor position, we call that a **malunion** – the bone is solidly healed, just in the wrong shape. The most common pattern is that the end of the radius **tilts backwards** (toward the back of the hand) and the bone **settles shorter**, so it no longer lines up properly with the neighbouring ulna bone.

That small change in shape has knock-on effects. A shorter, tilted radius throws off the **grip mechanics**, so power drops. It also **unbalances the joint where the two forearm bones meet near the wrist** (the DRUJ), which is the joint that lets you rotate your forearm – so rotation becomes stiff or sore. And because the radius has dropped, the ulna can effectively sit too "long," pressing on the small bones and cartilage on the little-finger side and causing that **ulnar-sided pain**. If the break ran into the joint surface itself and healed with a step, the cartilage wears unevenly and can lead to arthritis over time.

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What we can do about it

Not every crooked-healed wrist needs surgery. If the deformity is mild and you are managing well, **hand therapy, activity changes, a supportive splint and simple pain relief** are entirely reasonable, and we often start there.

When the deformity is significant and it is genuinely limiting you — pain, weak grip, restricted rotation — the operation that fixes the underlying problem is a **corrective osteotomy**. In plain terms, the surgeon carefully **re-cuts the bone at the site of the old fracture, swings it back into the correct alignment, and holds it there with a metal plate and screws.** Where the bone is opened up to restore length, the gap may be filled with **bone graft** (your own bone, donor bone, or a bone-substitute material) — though with modern plates many corrections now heal reliably without a graft. If the little-finger-side bone is the main problem, the surgeon may instead (or also) **shorten the ulna** to take the pressure off that side.

These days the operation is often **planned in advance on a 3D computer model** of your own wrist, and the surgeon may use a **custom-made guide** so the cut and the realignment match the plan precisely — this is especially useful when the break went into the joint surface.

What to expect

It helps to know up front that this is a **bigger undertaking than the original fracture surgery** — the surgeon is reshaping healed bone rather than simply fixing a fresh break, so recovery is more involved and takes longer. The bone needs to knit in its new position, which typically takes a couple of months, and the plate is usually left in place.

The good news is that, for the right wrist, the gains are real and lasting: studies consistently show **improved pain, better grip and better forearm rotation**, and patients generally report being satisfied years later. **Correcting the shape early — before the joint and surrounding ligaments have adapted to the bad position — tends to give the best result.** It is not a guarantee of a perfectly normal wrist, and if arthritis has already set in the benefit is more limited, but for a symptomatic malunion this operation reliably makes the wrist work better than it did.

When to see someone

- A wrist that **healed crooked and stays painful, weak or stiff** months after a fracture — it is worth having the alignment assessed, because correcting it earlier generally works better.
- **Pain on the little-finger side of the wrist** that flares with twisting or leaning on the hand, especially with a clunky or restricted forearm rotation.
- **Worsening loss of grip or rotation**, or trouble with everyday tasks like turning keys, pouring, or using tools.

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- **Pins and needles or numbness** in the thumb and fingers after a wrist fracture – a nerve may be irritated and should be checked.

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