

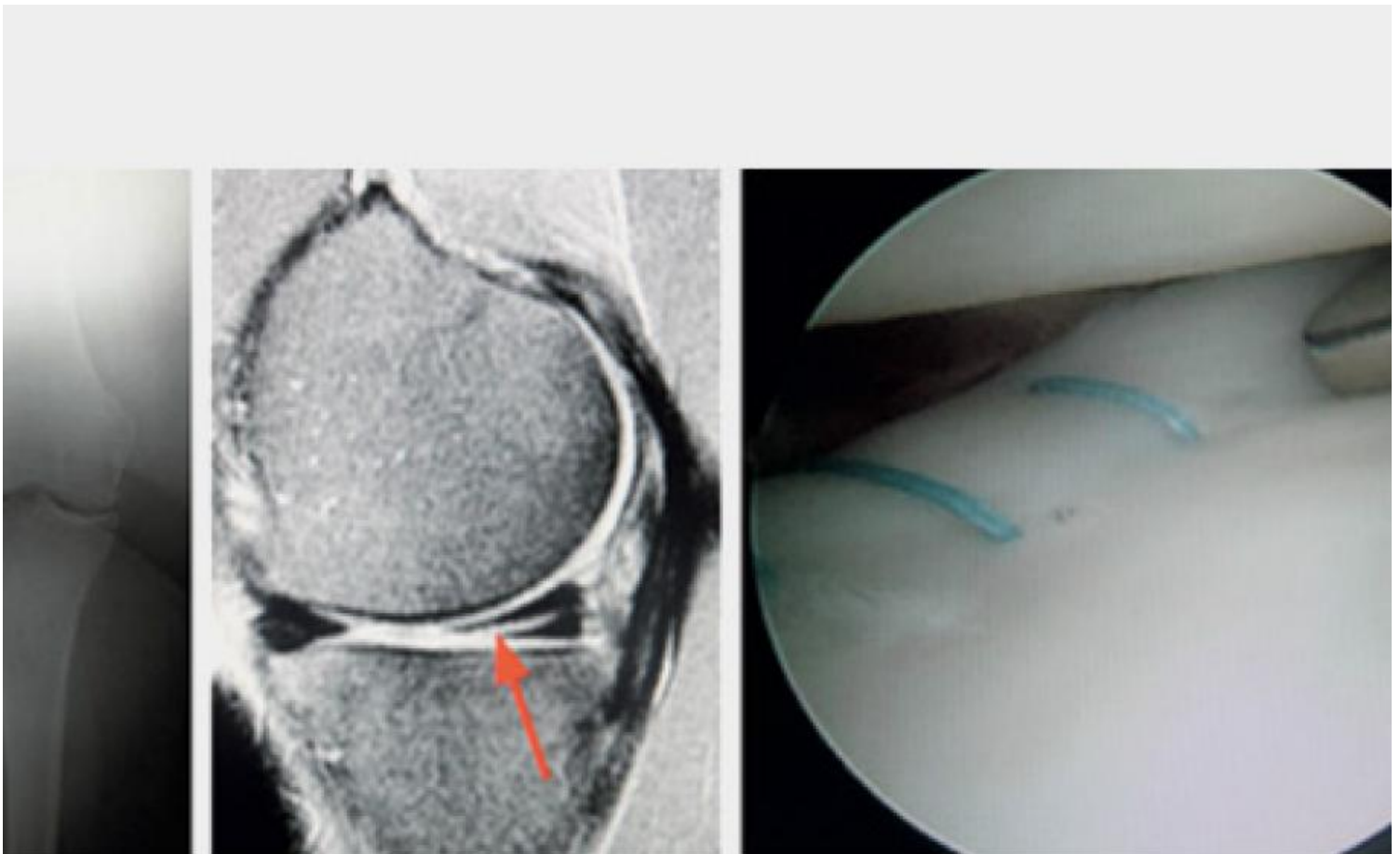
# Meniscal tears and repairs

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The meniscus works like a shock absorber in the knee, assists with lubrication of the joint and helps to stabilise the knee. Most meniscal injuries are from a twisting-type movement of the knee. Unfortunately, the meniscus has a poor blood supply and it therefore has a limited potential to heal.



Injury to the meniscus and even partial loss of meniscal function significantly alters force transmission across the knee.

This allows arthritis to develop over a very long time period (the severity and timing of the resulting arthritis depends on a patient's age, activity levels, body weight and degree of meniscal damage).

Damaging the lateral meniscus has a much poorer long-term prognosis than damage to the medial meniscus.



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Most patients with a repairable meniscus are under 45 years of age and up to 80% of these are associated with a tear of the anterior cruciate ligament.

Isolated tears in young patients can result from a specific high energy twisting incident but older patients may develop symptoms from just standing on a chair.

### **Clinical features**

The clinical features of a meniscal tear can be variable with all or none of these features being present:

- History of sports-related injury.
- Pain not allowing further movement or game play.
- Pain localised to the anteromedial joint line for a medial meniscal tear; the pain that occurs with a lateral tear is far more diffuse.
- Locking or catching of the knee.
- Swelling can appear hours after the injury but the knee does not always swell with an isolated meniscal tear.
- Initial symptoms are relieved by rest.
- Symptoms reappear after trivial twists or strains of the knee.

Signs of a meniscal tear include:

- The knee may be held slightly flexed.
- An effusion may be present
- Localised tenderness over the medial joint is typical of a medial meniscus tear;

tenderness on the lateral side is less well-localised.

- Extension is often limited; flexion is generally not reduced.
- A McMurray test may be positive.
- Quadriceps muscles will be wasted in long-standing cases.

## **Investigations**

A plain x-ray of the knee is always performed. This includes a weight-bearing AP, Lateral, Notch view and Skyline patella view.

This will exclude fractures, osteochondritis dissecans, arthritis or tumours.

If the diagnosis is not clear, an MRI scan may be helpful but is not always useful in deciding on treatment (and may delay things unnecessarily).

MRI scan findings should be closely correlated with the patient's symptoms and signs as up to one third of meniscal tears present on MRI are asymptomatic.

An MRI scan helps determine the extent of the tear but the final decision whether to repair or not can not be made until the time of surgery as it depends on the size, site and the quality of the remaining meniscus.

## **Types of tears**

While there are other possibilities, the two common forms of meniscal tears are:

1. Bucket handle: This is often a larger tear that is amenable to repair.
2. Degenerative: The tear starts at the inner edge and works its way back. This causes a horizontal tear which is not repairable.

Symptomatic degenerative tears are best treated with a partial menisectomy but in younger patients every effort should be made to repair the meniscus where possible.

## **Repair or resect?**

When assessing a meniscal tear to decide if it is repairable, the location of the tear, the type of tear and it's related blood supply are taken into account.

Three zones determine the healing prognosis for meniscal lesions: red-red, red-white, and white-white. The red-red zone is fully vascular and therefore has an excellent healing prognosis. The red-white zone is at the border of vascular supply

and has a generally good healing prognosis. The white-white zone is relatively avascular and has a poor prognosis for healing.

Meniscal repair procedures are divided into two major types: open and arthroscopically assisted. The location of the tear will determine which technique is used.

Rehabilitation after a meniscal tear can take up to six months to complete but is well worth the effort as it protects the knee from arthritis in the long term.

Generally speaking, younger patients should be referred early for surgery as the results of repair are better if performed soon after the injury.

### **Summary**

Historically, the lack of understanding of the function of the meniscus resulted in its total removal when it was injured. Unfortunately, this led to a generation of patients with medial compartment OA. Increased preservation of meniscal tissue has led to less long-term arthritis. We now remove as little tissue as possible and repair the meniscus to preserve its function when we can.

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Generally speaking, younger patients should be referred early for surgery as the results of repair are better if performed soon after the injury.

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