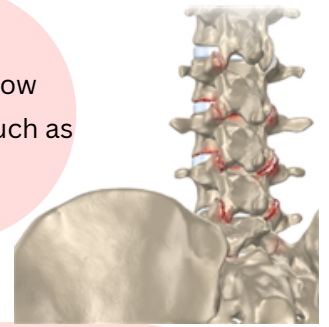


LUMBAR FACET ARTHRITIS

Dr Michael Ow-Yang, Neurosurgeon & Spine Surgeon

Lumbar facet arthritis is one of the most common causes of low back pain, particularly in patients aged 40 years or older. In younger patients, the two main causes of mechanical low back pain are musculoligamentous pain and lumbar discogenic pain. Serious pathology such as tumour, fracture or infection are less common causes but need to be excluded.

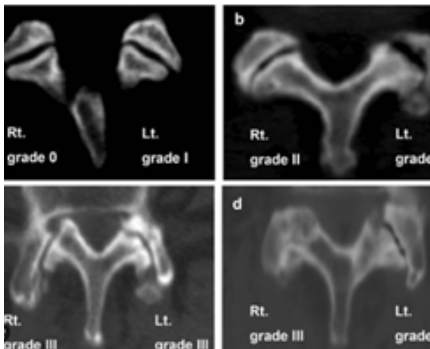
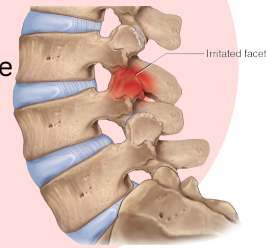


PATIENT HISTORY

- low back pain worse when standing from a chair, walking or with lumbar extension, flexion or rotation
- sharp, stabbing pain on one side in the paravertebral region
- pain may radiate to the groin or leg in a non-dermatomal distribution
- the patient may have a history of strenuous activity / work and excessive loading of the spine

PHYSICAL EXAMINATION

- reduced range of motion in the lumbar spine
- pain with movement, particularly extension and rotation of the spine
- localised tenderness over the transverse processes on palpation



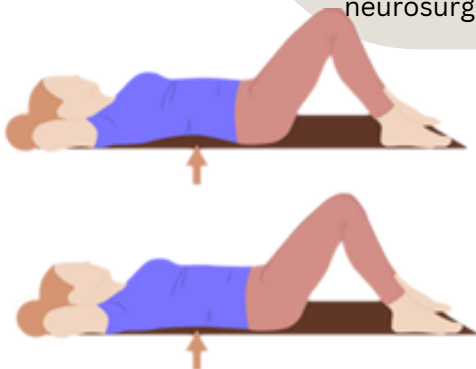
DIAGNOSTIC TESTING

As the facet joints degenerate, structural changes may be observed on CT or MRI. These include:

- Changes in the width of the joint space
- Irregularity of the joint surfaces
- Overgrown osteophytes and facet joint hypertrophy
- Subchondral cyst formation and/or synovial cyst formation

Facet joint hypertrophy may encroach on the neural canal causing lateral recess or foraminal stenosis or canal stenosis. These changes are of varying significance as they are also found in asymptomatic individuals.

Diagnostic medial branch blocks may assist in confirming the source of pain however the cost-benefit is relatively poor particularly with a high pre-test probability. If thorough history-taking and physical examination is suggestive of facet joint pain then a referral to a neurosurgeon without any additional diagnostic testing is appropriate.



TREATMENT OPTIONS

Conservative treatment options include:

- Comprehensive physiotherapy assessment and treatment programme including core strengthening exercises
- Weight management to reduce loading on the facet joints
- Non-steroidal anti-inflammatory medications
- Avoiding aggravating factors such as repetitive extension and lateral flexion of the lumbar spine that increase load through the facet joints

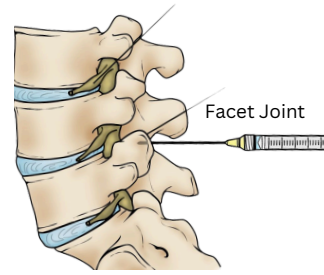
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MINIMALLY INVASIVE TREATMENTS

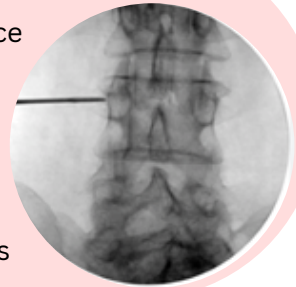
Minimally invasive percutaneous needle treatments include lumbar facet steroid injections or lumbar facet radiofrequency denervation.

Steroid injections may be performed by a radiologist and referred by any medical practitioner. Patients do not require a specialist consultation. If patients respond well to steroid injections and wish to escalate treatment, they may be consider a lumbar denervation procedure.



Radiofrequency denervations have a 60-70% chance of improving pain with an optimal duration of benefit of around 12 months. The goal is to alleviate pain so the patient can progress with physical rehabilitation and maximise their functional capacity. Treatment may be repeated once a year if beneficial.

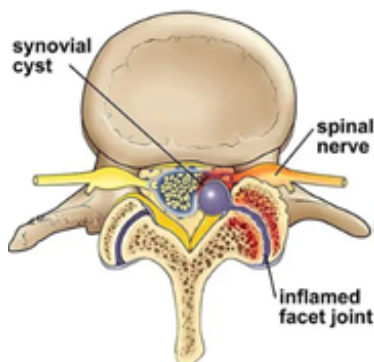
Denervations are performed as a day procedure under a light anaesthesia to maximise patient comfort. Intra-operative imaging ensures safe placement of needles at the junction of the lumbar transverse process-facet junction. The procedure is extremely safe aside from a very small risk of infection or temporary injury to a nerve root. Recovery from lumbar denervation is straightforward with most patients returning to normal activity within 7 days.



LUMBAR FUSION SURGERY

If pain is severe and disabling despite all conservative treatment measures, then definitive surgery requires a lumbar fusion procedure as there is no facet joint replacement surgery.

Surgery to treat radiculopathy is highly effective (around 90% positive result) compared with surgery for mechanical low back pain without radiculopathy (around 50% positive result) when measuring patient satisfaction, pain reduction and quality of life. For this reason, it is preferable to undertake all non-surgical management with steroid injections and/ or denervations before considering fusion surgery.



FACET SYNOVIAL CYSTS

These are outpouchings of the joint capsule due to synovial hyperplasia, filled with fluid and synovial tissue. Some are external to the spinal canal.; a cyst encroaching into the spinal canal may cause nerve compression symptoms.

Symptoms can result from mechanical compression, nerve tethering or acute inflammation and can be aggravated by heavy lifting, extension movements or lateral flexion movements. Attempts at needle aspiration tend to be unsuccessful as the synovial tissue is not able to be aspirated.

The natural history is unfavourable for facet cysts encroaching on the neural canal as the cysts do not easily resolve. Adherence to nerve roots causes radicular symptoms and most patients will eventually require nerve decompression surgery. If cysts are recurring then facetectomy and fusion surgery may be required.