St Vincent's Neuroscience

THORACIC DISC PROLAPSE

The human spine consists of alternating bony vertebrae and intervertebral discs extending from the neck to the coccyx.

The mid-portion of the spine is called the thoracic spine and allows rotation of the trunk. The intervertebral discs are the 'shock absorbers' of the body and are composed of an outer strong fibrous membrane and an inner 'jelly-like' nucleus giving both strength and elasticity.

A disc prolapse occurs when there is a weakening in the outer membrane leading to a protrusion of the inner nucleus. This protrusion usually heads postero-laterally towards the spinal canal which contains the spinal cord and nerve roots.

CAUSE

There is no known cause of thoracic disc prolapses. Heavy lifting and straining may exacerbate the condition.

Thoracic disc prolapses are not common. Investigations will be performed with suspicious truncal back pains to rule out a bony tumour or mass.

SIGNS AND SYMPTOMS

A variety of symptoms are present with thoracic disc prolapse. These include:

- Upper back pain
- Truncal pain
- Myelopathy

Back pain

Severe upper back pain may be present with an acute disc prolapse. This is due to the sensory innervation of the disc annulus itself. There will often be associated muscle spasm, aimed at limiting movement of the neck and relieving pain. However, spasm in itself may cause generalised back pain.

Truncal pain

A postero-lateral disc prolapse may result in pressure on the exiting nerve roots. The nerve roots supply power and sensation to the truncal muscles and severe pain. Numbness and tingling may also occur in the same region. The pain may be worsened with every breath cycle.

Myelopathy

A large or central disc prolapse may result in pressure on the spinal cord. This may result in disruption of the nerve signals to the legs and cause spastic legs, hyper-reflexic legs and difficulty walking (myelopathy). It may also result in radicular symptoms with pain shooting into the arms, torso or legs. There may also be loss of control of the bowel and bladder function.

INVESTIGATIONS

- Plain x-rays – these are usually taken to rule out any fracture or malalignment. Dynamic x-rays taken in flexion and extension may be performed to document any instability. Plain x-rays do not give any information on nerve root or spinal cord compression.
- CT thoracic spine – this is usually ordered by the GP for back and truncal pain. It gives some information on bony alignment but often fails to demonstrate a disc prolapse. It will also give help to rule out any bony lesions contributing to the symptoms.
- MRI thoracic-spine – this is the gold standard in looking for thoracic disc prolapses and to delineate the degree of nerve root or spinal cord compression. It also helps in planning any neurosurgical intervention by giving an indication of size and position of the disc prolapse.

The presence of intractable radicular pain and neurological deficit is an indication for operative neurosurgical treatment. Neurosurgical treatment aims to relieve symptoms via decompressing nerves and with or without stabilising the spine (fusion).

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