

CERVICAL SPONDYLOSIS:

The term cervical spondylosis refers to a degenerative condition in the cervical (neck) area. In degenerative conditions of the spine, there is a loss of normal structure and function. For reasons that are not yet clear, a degenerative process occurs in various components of the spinal column over time. This “ageing” (or “maturational” process) occurs at different rates in different people.

Degenerative disease of the spine is present when radiographic changes are associated with this process. Biochemical and microscopic changes occur before the radiological manifestations. The original degeneration starts in the intervertebral disc. Many factors influence this, such as the inherited quality of the anulus (ring structure of the disk), repetitive strain on the disc and other stresses on the cervical spine such as occupation, sporting activities or even incidents of trauma, major or minor.

The disc between the vertebrae serves as a shock absorber. Should this function become less effective, stresses on the small joints of the individual vertebrae (paravertebral joints) as well as the small joints on the vertebral body will show structural changes. These changes eventually lead to a loss of cartilage and formation of osteophytes (small bony intrusions into the area of the nerve exit – called a foramen) or bony ridges that form at the back of the vertebrae and they may compress the spinal cord. These changes can then lead to a decrease in the size of the spinal canal and the foraminae. When this occur, patients may develop a variety of neurological symptoms.

THE SYMPTOMS OF CERVICAL SPONDYLOSIS:

1. Pain:

This can be acute pain, sub-acute pain, chronic pain or recurring pain. This is often accompanied by muscle spasm and headaches.

2. Nerve root compression (radiculopathy):

When there is encroachment on the nerve root in the narrow foraminae, neurological symptoms develop. Initially it is pain and a feeling of pins and needles. Later, when the nerve loses function, it is followed by a loss of sensation and eventually a loss of motor function and a wasting of muscles.

3. Compression of the spinal cord:

When this occurs, it is called a myelopathy. There develop changes within the spinal cord leading to deterioration of function in the arms and legs with a loss of motor power, disturbance of gait, severe wasting of muscles, increased muscle tone resulting in spasticity and eventually in a certain percentage of people, diminished control of bladder function and even rectal control.

DIAGNOSIS:

The diagnosis of cervical spondylosis can be confirmed by:

1. Clinical examination.
2. Radiology. Straight x-rays to show the basic changes in the bony structures.
3. Special investigations such as computed tomography (CT scan).
4. Myelography with or without a CT scan combination.
5. Magnetic resonance (MR) studies which gives an extremely good evaluation of the spinal cord and soft tissue structures.

These investigations can further be augmented by studies such as electromyography evaluating the conduction impulses within the distribution

area of the nerve roots, and discography whereby injections are given into the disc spaces to evaluate degeneration.

The physician should always consider the different possibilities of pathology in areas outside the spine such as the shoulder joint or areas in the arm where the major nerves might be entrapped, intra-cranial conditions and different metabolic diseases.

TREATMENT:

1. Conservative therapy:

Non-operative treatment of degenerative disease, usually follow the following pattern:

Lifestyle modification to lessen stresses on the cervical spine (change in exercise programme, re-arranging the sitting position at a desk and computer, etc), exercise, drug therapy (including anti-inflammatory medication and anti-muscle spasmodics).

Physiotherapy should be concentrated on the paravertebral muscle groups with exercises encouraging strengthening of muscles and improving endurance.

The use of a soft collar during acute phases is often of benefit. Local injections into trigger areas or on to the paravertebral joints could offer relief of pain.

2. Thermo-coagulation:

In certain cases of diffuse cervical spondylosis, the small joints may be rendered less painful by high frequency treatment generating high temperature on the electrode tip, thus diminishing the activity of small pain conducting sensory nerves in relation to the paravertebral joint. This

treatment does not change the underlying structure of the joint and is purely symptomatic.

3. Surgery:

Surgery for symptomatic degenerative disease with pain as the main symptom, is rarely necessary or indicated.

Indications for surgery would usually be related to compression of the nerve root with loss of function, or spinal cord compression in the cases with myelopathy. There are different surgical procedures to consider. These can either be performed from the front of the spinal column (anterior approaches) or from the back (posterior approaches). The aim of the surgery would be to widen the exit area of the nerve root and re-establish the height of the disc space. This can either be done by replacement of the disc by an inter-vertebral bone graft or an implant, such as an inter-vertebral cage manufactured from materials such as Titanium or Peek.

Severe compression of the spinal cord, will necessitate removal of large areas of the vertebral body, followed by the placement of a stabilising cage or graft. The indications and exact nature of the surgery and the possibilities of complications in each instance, will have be discussed between the surgeon and the patient pre-operatively.