NECK PAIN

While problems with the cervical spine frequently lead to "neck pain," they can also present with pain/numbness/tingling/etc. in the shoulder area and/or the upper extremity (arm, forearm or hand). Most episodes of "neck pain" are caused by relatively harmless conditions. The most common of these conditions include: muscle strain ("pulled muscle"), weak neck extensors (muscles that hold up the head), degenerative discs (Figure 1), arthritic facets (Figure 2), spinal instability (spondylolisthesis- slipping of the bones) and cervical kyphosis (Figure 1). Neck pain affects a significant portion of the population at some point in their lifetime. The muscular causes of neck pain occur with an acute injury (ie whip lash) when there is a muscle strain ("pulled muscle") or from chronic conditions such as weakness and subsequent fatigue of muscles that support the cervical spine (generally due to weakness or being overworked due to cervical malalignment).

The most common reason for neck pain is due to the normal aging process of the discs in the cervical spine. This wear is a combination of biomechanical changes that occur in the disc (determined by one's genetic program) as well the mechanical effects of absorbing both weight and allowing motion to occur between the bones as they move against the disc. This mechanical wear is very similar to the wearing of a car tire of the sole of a shoe over time. When these discs reach a critical level where they can no longer absorb shock efficiently, this can result in neck pain (Figure 1).

Figure 1. MRI demonstrating normal degenerative discs at every level except at L5-S1 where the disc has degenerated ("worn out"). Note how the other discs are tall and have the white core (hydrated "jelly" inside a donut) whereas the L5-S1 disc is dark and has no white core in it. Thus, the L5-S1 disc has lost its ability to absorb shock and may lead to pain during a "flare up." This patient had back pain of the "discogenic" pattern. Xray demonstrating degenerative discs.

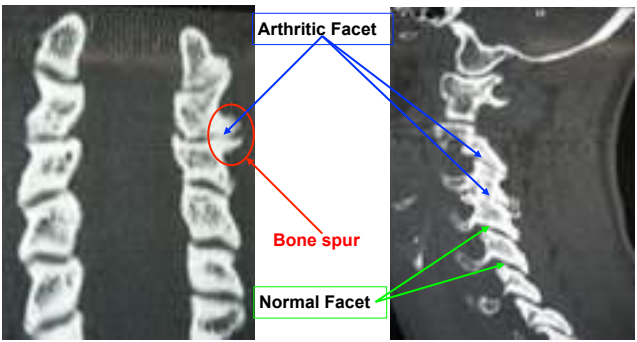

Figure 2 CT scan demonstrating a degenerative facet joint. *Normal* facet joints have a smooth surface made of cartilage that slides against each other. One of the facet joints is more worn out (right side of this page) than the other facet joint. This can lead to neck pain as two rough surfaces ("bone on bone") move against each other.

This common form of neck pain is usually worse when a patient spends an excessive amount of time in a “fixed” position (ie looking down at paper work, starring at a computer screen, etc). The person may note that they are often stiff and sore in the morning after waking. This is not a dangerous condition and treatment is based on the severity of the pain. Improving your aerobic conditioning and strengthening the neck extensor muscles can help in the long term management of this condition. Even if aerobic activity causes neck pain, it should be pursued. No long term harm will result in exercising through the neck pain.

If the pain is mild and you are able to cope with it using the occasional anti-inflammatory medication, then that is okay. For those whose pain is more severe and persistent, physical therapy can be helpful. For those who have persistent pain and fail both medical management and physical therapy, epidural steroid injections (ie “cortisone” injections) may be effective. While most patients do not need surgery for this condition, some patients who have failed all other treatment modalities and continue to suffer from severe pain, may benefit from surgery.