

Posterior Cervical Fusion

This involved surgery from back of the neck. After decompression of the cervical cord (laminectomy) and /or releasing the nerve roots. Small screws are then placed in the bony mass that forms the facet joints and connect them with rods on each side. This can be in one segment (connecting two vertebra) together or multiple segments. Clearly if it is performed in more than one segment there is expected added stiffness of neck which is part of the aim of the surgery in many cases.

Dr. Kohan will have detailed discussion regarding indications and reasons for choosing posterior cervical fusion approach over others techniques with you in details.

Post-operative expectations:

- Possible increased in neck stiffness
- If performed for neck pain secondary to facet arthritis, 90% of patients report reduction of their original neck pain almost immediately.
- Stabilization of the neck in trauma
- Relief of arm pain in 80-90%
- Risk of worsening of symptoms or new symptoms in 5%



C1/2 fusion:

There are various indications for fusion of 1st and 2nd cervical vertebra.

The most common indications are instability due to trauma and facet joint arthritis causing significant upper neck pain. Other indications include congenital malformations causing instability at C1/C2, or rheumatoid arthritis which could cause instability and pain as well as potential risk of cord compression.

C1/C2 fusion is also one of Dr Kohan's procedure is of interest in the cervical spine with extensive experiencing is 2009.

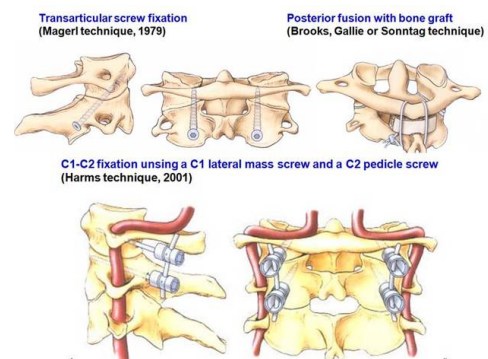
Past from trauma there are many patients who present with severe pain secondary to arthritis of the joints between C1 and C2. After initial management with oral analgesia and anti-inflammatories and exhausting other methods such as steroid blocks, fusion at C1/C2 provides excellent results in resolution of pain arising from these joints.

There are several ways of performing C1 and C2 fusion including:

- Trans-articular fixation and
- Insertion of C1 lateral mass screws with C2 pars screws. (Harm's/Goal method)

Goal-Harm's Technique:

This is Dr. kohan's preferred method of fusion for C1 and C2. It is generally safer and gives excellent rate of fusion.



In this method 2 screws are inserted in C1 located in the so-called lateral mass, and 2 screws are inserted in C2 along the pars or pedicles of the C2 vertebra. (see above diagram)

Although in experience hands this is a very safe technique with the availability of on-table CT scan and computer navigation (The O-Arm) in both St George public and St George Private Hospitals, this technique has become even safer as there is almost real-time visual feedback when placing the screws in C1 and C2 vertebrae.

Risks and potential complications:

The main concerns in this method:

- Potential risk of injury to vertebral artery as it passes through C2 or between C1 and C2 vertebrae. This is very rare as the course of the artery well demonstrated on pre-op scans and with use of computer navigation this risk is even less.
- Spinal cord injury, extremely rare
- C2 nerve injury, very uncommon for this nerve to be injured. However some surgeons routinely cut this nerve that could cause numbness on the back of the head. Generally cutting of this nerve is not needed.