

Instrumentation

Instrumentation refers to the hardware that is placed in the spine to facilitate treatment. It may be posterior metalwork, anterior metalwork, a cage, an interspinous spacer or a disc replacement. The latter two are discussed separately on the treatment page.

Posterior metalwork

This is usually made of titanium or sometimes Cobalt Chrome. It usually comprises screws that fit into the bone with rods that attach the screws together. Sometimes hooks are used to hook over the bone but these attach to the rods in the same way. The screws used now are highly precision engineered and can facilitate the correction of a spinal deformity if required although the most important factor in doing this is not the instrumentation but the surgeon and the technique used. With time, screws and rods may loosen or break. They are very strong but fatigue with time and if bone does not fuse around the metal then they will invariably fail at around 9-12 months but it may be longer and can occur many years later.

A broken or loose screw may or may not signify a problem. It can be seen in patients that are entirely asymptomatic and in others may suggest a non-fusion or pseudarthrosis. Reasons for this happening include smoking, infection, malalignment amongst others, although sometimes there is no obvious cause.

Anterior Metalwork

Less common than instrumentation on the back of the spine, but nevertheless has an important role to play in some cases. Rods and screws can be attached to the spine to correct deformity and/or fuse the spine e.g in tumour or trauma cases. It is often used in conjunction with a cage. The same problems occur as with posterior metalwork but it may be a lot harder to revise due to the approach.

Cages

The term cage describes what the original 'cages' looked like but now there are many sorts. Originally, they were made of a wire mesh and hence the name. Now they may be made of many things and often look nothing like a cage. They give anterior support to the front of the spine when required. In tumour or trauma they may replace the entire vertebral body and may be expandable whereas in degenerative or deformity cases they are used to replace the disc. The cage can be inserted from either an anterior or a posterior approach. The biggest problem (although rare) with a cage is migration. This may or may not be symptomatic but if it is, revision is necessary.