

## **Spondylolysis**

This is a small defect in a part of the back of the spine that connects it to the front of the spine and the vertebra above. 'Spondylo' = spine and 'lysis' = gap. It may be present in up to 5% of the population.

The exact cause is not known but it is postulated to develop in the first or second decade of life. The area of bone has an increased load from certain activities and then a small break or stress fracture develops. This is in effect what a spondylolysis is, a fracture in the pars interarticularis of the vertebra.

In many patients it is entirely asymptomatic – and remains so – but in some it can cause significant problems. This is usually back pain although there is sometimes some mild nerve root irritation causing leg symptoms. Furthermore, it can lead in chronic cases to a spondylolisthesis (see help sheet) which can cause significant neurological compression as well as back pain.

### **History**

Usually low back pain is worse with activity and relieved by rest. There may be a history of repeated trauma or an exercise involving hyperextension e.g. gymnastics, but often it just happens and is entirely asymptomatic for many years, presenting in the second, third or fourth decade with pain.

### **Examination**

Patients may have an increased lordosis (curve backwards) in their lower back which may predispose to this type of problem. There is also an association with scoliosis and this should be looked for. Slight tenderness may be found and extension may be uncomfortable. The diagnosis is reliant upon good imaging and then injections as required.

### **Investigation**

Plain radiographs may show the defect and special oblique views may be requested. MRI is not ideal for picking them up and CT remains the gold standard. Sometimes a bone scan is requested to see if there is increased uptake in the area. The theory is that if it is hot on the scan then it should settle with rest. I prefer to request a diagnostic pars block with local anaesthetic and steroid by the radiologist using CT guidance. If this numbs the pain then the diagnosis is clear. This has the added benefit of often being therapeutic and so taking away the pain.



Figure 1 – a spondylolysis confirmed on CT\*

## Treatment

A period of rest and avoiding exacerbating activities may be enough before a gradual return to activity is attempted. Often patients have already tried this and (confirming the diagnosis aside) I usually suggest a pars block as the first line of treatment. This also has the advantage of confirming (in most cases) the source of the problem. If the pain goes away and recurs then consideration should be given to repairing the defect. This is a relatively simple procedure with a 48 hour stay in hospital and involves fixing the back of the spine back onto the front. I use the DOS system (see 'Links' page). The mobility of the spine is not affected and a rigid fixation is achieved with a usual return to full day to day activity in 4 weeks.



Figure 2 – following fixation of the defect