Notes to accompany the poster presentation by Dr. Stephen Sandler PhD DO

DIFFERENTIAL DIAGNOSTIC QUESTIONING FOR THE THREE COMMONEST STRUCTURAL PROBLEMS CAUSING BACK PAIN IN PREGNANCY

SIJ pain has the following characteristics

Definite laterality to pain

SI pain alone does not cross the midline , if it does it is more likely to be disc or facet pain

Can be referred or root pain

Referred pain to a myotome sclerotome or dermatome, or root pain due to entrapment syndrome. The Piriformis muscle is usually pierced by the sciatic nerve and an SIJ lesion especially involving the lower pole can lead to sciatic nerve pain and clinical signs such as reflex and power changes in the area supplied.

Turning in bed provokes pain

Sleep is disturbed by SIJ pain especially if it is the pain of inflammation but also because to turn in bed you have to use the pelvic girdle to turn and swivel the hips to the new position.

Getting in or out of bath lifting leg is painful

This is all about unilateral weight bearing. The act of stepping over the high sill of the bath involves separating the legs and standing on one leg. Your patient will not be able to stand on the affected leg with SIJ pain. They will also have difficulty getting out of the bath.

Getting out of the car causes pain

Again, this involves separating the legs and then unilateral weight bearing. Depending on whether they are driving or a passenger and if the car is left hand or right hand drive this will be easier or harder. Certainly, they will not be able to get out of a low car seat without help or without grabbing hold of the door to pull themselves up.

Going upstairs

taking the whole weight of the body against gravity causes pain on the affected side

Pain referred to groin or genitals, and it goes over the hip not to the hip. Patients use the back of the hand showing pain radiating from the PSIS and then over the front of the hip and down to show the pain in the groin

Walking on flat ground

This involves the weight bearing phase on the affected side not the swing phase of walking.

Facet Joint pain has the following characteristics

It does not involve weight bearing

Facet joint pain can occur when the patient is off weight bearing unless there is an anomaly and weight bearing facet joints or spondylarthrosis. Normal facet joints do not carry weight and when they are called upon to do so for example in the last weeks of pregnancy when she has a deep lordosis they can start to hurt.

Pain is related to movement specifically rotation

There is only one degree of rotation per facet in the lumbar spine and so rotation in the neutral plane will engage the facet joints quickly causing pain. If they flex and rotate the pain will go away.

Does not like lateral compression

For the same reason above. This is one of the principles behind the triangle test a specific test for SIJ dysfunction.

History of relatively small injury in relation to great pain

There are thousands of nocioceptive fibres around the facet joints and so a small injury can produce violent pain and muscle spasm which can die down again very quickly.

Eased by rest in any position but normally laying on the side with the painful side up.

Referred to an extremity

There is little evidence that facet pain will entrap a nerve root bit it will refer via a sclerotome, myotome, or dermatome

Not affected by coughing or sneezing

because it does not cause a raise in intra abdominal pressure as in disc pain.

Morning pain and stiffness

Care should be taken with this question because inflammatory back pain from rheumatoid disease or any of the sero negative arthritides will cause morning pain and stiffness.

If there is a structural fault or derangement of the internal architecture of the annulus fibrosis it can lead to a disc bulge or herniation, or if there is extrusion of the material from the nucleus pulposus outside of the protective annulus fibrosis this is a disc prolapse. The discs are like sponges and absorb water and nutrients from the bone end plates during the night when the patient is horizontal and not weight bearing. When the patient rises they put all of the body weight onto the inflated disc and this will encourage the bulging and cause muscular hypertonia as a protective measure, hence the morning stiffness. Once they has been on their feet for a while then they literally squeeze the excess fluid out and they will have more freedom of movement as the hypertonia in the muscles dies down.

Weight bearing component

There are only two tissues that support the body weight under physiological conditions in the spine, these are the intervertebral discs and the vertebral bodies. (see facet joint pain above). The medical case history questioning should alert the osteopath regarding potential pathology involving the

vertebral body such that positive responses to weight bearing activities should suggest the involvement of the disc as a source of pain.
Standing is possible but not for too long i.e. standing at the sink to wash, standing in the kitchen cooking, standing in a queue or supermarket shopping at a slow pace involving frequent stops. These are the questions that elicit a positive response.

Age of the Patient.

The commonest age to develop a prolapsed disc is between 30 and 50 years. Twice as many men as women are affected.
In pregnancy degenerative disc disease is not a common presenting symptom this despite the fact that she is working harder to carry the extra weight of both the baby and the extra weight she has put on during the pregnancy. This is probably because of the high levels of circulating oestrogen having a strengthening effect on her skeletal muscles. Paradoxically the levels of circulating relaxin will mean that the fibrous structures of the annulus can be weakened. This is why muscular back pain is so common in pregnancy, they literally have to work harder to protect a weak annulus and also in the case of the postural muscles to allow the postural changes of pregnancy.

Increased abdominal pressure

Patients with a weak annulus commonly report pain when sneezing or coughing or on defecation because the raised intra abdominal pressure causes a disc to bulge, and also because these actions encourage an increase in lumbar flexion.

Sleep is not normally disturbed.

Patients with disc problems can sleep throughout the night if they can get into a comfortable position. It is the SIJ patients who are disturbed by pain when they turn over in bed (see above).

Daily pattern

Patients with disc disease commonly report that it is painful and stiff in the morning, easier at lunchtime and then sore as the day progress into the afternoon and evening.

Repeated micro trauma

It is not common for an acute disc pain to be the first time the patient has had an acute back pain incident. Much more common is the history of repeated small attacks which culminate in a major disc prolapse.

Movement eases pain but not for long they tend to fidget

This is because as the small postural muscles contract to support the weak annulus they fatigue and the patient has to move so that they can relax. The new position repeats the action such that they find it difficult to sit for long in the cinema or theatre because of this constant need to change position.

Going uphill

When we walk uphill or up a slope we lean forward into a flexed attitude. Likewise, when we walk down a hill it is a position where the lumbar spine is held in extension. The flexed attitude will challenge the disc lesion.

Getting out of a chair.

Getting out of a chair usually involves spinal flexion followed by extension. Especially if it is a low sofa or easy chair. This is because in the normal mechanism of rising from a chair, especially a soft chair, the patient first has to hyperflex to shift his centre of gravity forward which encourages the pelvis to move over the feet, and then to use all of his spinal extensors and hip extensors to pull him upright against gravity.

THE ABOVE IS ONLY A TISSUE DIAGNOSIS .IT SHOULD LEAD TO THE STANDING EXAM, MOVEMENT EXAM ETC AND THEN A PALPATORY EXAM. THIS IS THEN FOLLOWED BY A VISCERAL EXAM AND A CRANIO SACRAL ASSESSMENT. THIS IS HOW WE COME TO THE CONCLUSION THAT SHOULD DICTATE TREATMENT.