GCMI
Gold Coast Medical Imaging Pty Ltd
IMAGING UPDATE
JULY 05
THE OFFICIAL NEWSLETTER OF GOLD COAST MEDICAL IMAGING/TWEED VALLEY RADIOLOGY

PROTOCOL: Facet Joint Syndrome

Chronic low back pain is second only to the common cold as the most common affliction of mankind and is likely the most common chronic pain syndrome. As there can be numerous complicating factors, the search for a precise cause can be a complex and difficult process.

The facet joints are a true synovium line joint, and like the knee or elbow they can get inflamed secondary to injury or arthritis and cause pain and stiffness.

The major causes of facet joint disease are osteoarthritis, erosions of adjacent bone margins of the facets, bony over growths of facets and articular processes, and instability.

The sensory nerve endings innervating the facets and surrounding tissues become irritated by the inflammatory process, resulting in pain. Repeated or excessive hyperflexion, hyperextension or twisting

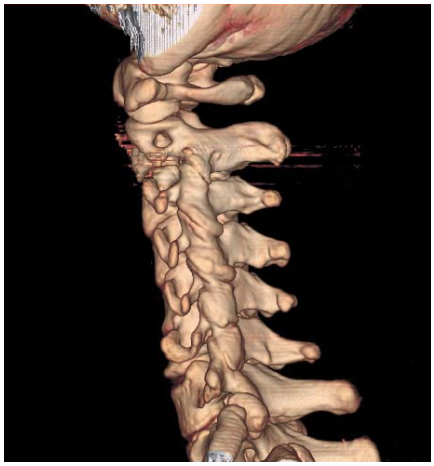


Figure One - Multislice CT image of lumbar spine with facet joint degeneration

movements may eventually result in the cartilage wearing away and facet disease.

Disc narrowing may also predispose to facet disease. When the disc becomes narrowed up to 70% of the compression force that is usually applied to the disc is transferred to the facet joints.

Developmental anomalies such as facet joint tropism or spondylosis can also predispose to facet disease and because other disorders such as disc disease and instability can contribute to pain, localising the cause can be a challenge. Often there is referral from the facet joint to surrounding areas and patients with chronic back pain often have other conditions that contribute to the pain symptom complex. Initial medical imaging studies such as multislice CT and MRI are necessary to exclude other causes

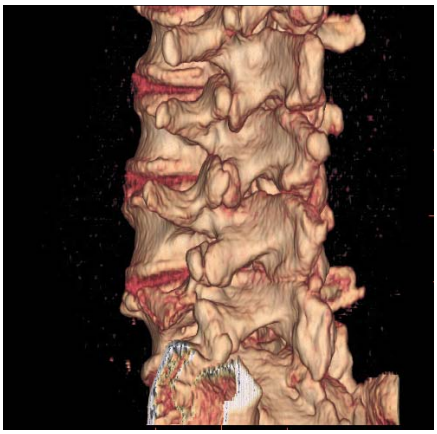


Figure Two - Multislice CT image of lumbar spine with facet joint degeneration

of pain such as fracture, disc protrusion and nerve root entrapment, or neoplasm.

However, because imaging cannot always be relied on for facet related pain clinical information becomes very important. A detailed and careful history combined with a physical examination is vital in diagnosing facet syndrome.

Facet joint injections can be used to diagnose the cause and location of pain and also to provide pain relief. There are various components to what is known as facet syndrome and are indications for intervention.

Lumbar Facet Syndrome

- Unilateral or paravertebral low back pain, which is often aggravated by rest.
- Deep, dull pain that is often limited to the low back, buttock and thigh and down the knee in a nondermatomal distribution.
- Pain accentuated by twisting or rotational motion.
- More pain on extension than flexion. Pain may be relieved by flexion.
- Pain exacerbated by moving from a sitting to a standing position.
- Pain characteristically relieved by standing, walking, rest or repeated activity.
- Morning stiffness.
- Normal neurologic examination.
- Tenderness to palpation over affected facet joint.
- Radicular pain absent with straight-leg raising.

Cervical Facet Syndrome

- Unilateral or bilateral paravertebral neck pain.
- Decreased range of motion.
- Local tenderness over affected facet joint(s).
- Upper cervical facet joints causing not only neck pain but also headaches and cutaneous pain.
- Pain frequently referred into the shoulder girdle. Pain can extend to the elbow but rarely distal to the elbow. The pain should follow a nondermatomal pattern.

IN THIS ISSUE:

Facet Joint Injections

Increasingly the therapeutic practice of facet joint injections is being performed under CT control. It is a safe procedure and most patients benefit from it often with immediate relief of pain.

Patients undergoing this examination often have degenerative disease of the facet joints of the lumbar or cervical region as shown on CT. Occasionally this procedure can be performed when no other identifiable cause for pain — based on imaging examinations and clinical evaluation — can be determined.

"If the joint is the area causing the pain, patients should start getting pain relief almost immediately from the local anesthetic used."

Technique

After the patients' consent has been obtained, the facet joint of the area concerned is localised with the patient prone. The skin is marked with an indelible ink, antiseptic applied and local anesthetic injected. A 22 G Spinal needle is then inserted into the joint/s of interest and scans performed to check position, and adjusted accordingly.

When the optimal position has been obtained a combination of 1ml of 0.5% Marcaine and 1 ml of steroid (Celestone Chronodose) will be injected. For two joints, half the dose will be given to each joint. If the joint is severely degenerative, then the patients may still benefit from injecting the steroids and anesthetic around the joint.

If the joint is the area causing the pain, patients should start getting pain relief almost immediately from the local anesthetic used. However, if patients have had no pain relief within seven days, they will probably not benefit from the procedure.

Pain relief can be obtained for up to six months by using the steroid. There are no restrictions on the patient after the procedure.

The patient is advised to keep a diary of their symptoms so that at a much later time they are able to indicate how long they had relief from the procedure.

Complications and Contraindications

Complications seem to be rare during facet joint injections, but may include bleeding, infection and allergic reaction.

Intra-vascular injection is usually harmless, but may result in a false negative result.

Contraindications include allergy to local anesthetics or steroids, coagulopathy, pregnancy, systemic infection or skin infection over the puncture site, and inability to target the facet joint or medial branch nerve due to extensive, solid lateral or posterolateral bony fusion.

Figure Three – Needle being inserted into the facet joint

Additional Medicare Items for CT Colonography

Gold Coast Medical Imaging would like to highlight changes to the Medicare Benefits Schedule as of 1 May 2005. Two new items were introduced for CT Colonography:

56549 Computed tomography of colon, following incomplete colonoscopy in the preceeding 3 months, where the patient is referred by the specialist or consultant physician who performed the incomplete colonoscopy, not being a service to which item 56301, 56307, 56401, 56407, 56409, 56412, 56501, 56507, 56801, 56807 or 57001 applies.

56551 Computed tomography of colon, where the patient is referred by a specialist or consultant physician and where (a) one of the following conditions is present: (i) fistulous disease (ii) obstructed colon (iii) megacolon and where (b) the request specifies the condition; not being a service to which item 56301, 56307, 56401, 56407, 56409, 56412, 56501, 56507, 56801, 56807 or 57001 applies.

CT colonographies are available at our Southport, Tweed Heads and The Tweed Hospital clinics, and are performed on multislice CTs with the latest CT colonography software.

FerriScan™ for Measurement of Liver Iron Concentration

Iron Overload

Having too much iron in your body and being unable to get rid of this excess iron is one of the most common hereditary disorders and is often termed "iron overload".

Most cases of iron overload are caused by a genetic condition known as hereditary haemochromatosis which causes excessive absorption of iron from the food we eat on a daily basis. The surplus iron is retained in organs and tissues such as the liver becoming toxic and causing severe illness and premature death.

Other relatively common conditions resulting in iron overload include thalassemia, sickle cell anaemia and hepatitis C.

Testing Iron Concetrations

The current gold standard test for haemochromatosis is through a liver biopsy where the level of iron concentration is quantified.

FerriScan™ is a new non-invasive technique involving an MRI scan to measure this level of iron concentration. FerriScan™ has a number of significant benefits over liver biopsies.

FerriScan™

- Non-invasive and painless
- Can be performed regularly if necessary
- No hospital stay
- Can be performed on infants and young children
- Cheaper and more efficient to administer
- Reduced liability to clinicians
- Results assessed at a central location in 24 – 48 hours
- Accurate measure of liver iron concentration

Liver Needle Biopsy

- Invasive, painful and a potential health risk from bleeding
- Can only be performed about every 18 months
- Short hospital stay
- Not recommended for infants or young children
- Expensive surgical procedure
- Greater clinician liability risk
- Results can take 7 to 14 days
- Can be inaccurate due to uneven distribution of iron in the liver

Figure Four shows typical MRI scan and histogram results and the corresponding iron concentrations for various medical conditions. Yellow areas indicate high iron concentrations and red areas low iron concentration.

From these scans it is clearly demonstrated that the iron stores throughout the liver are not evenly distributed.

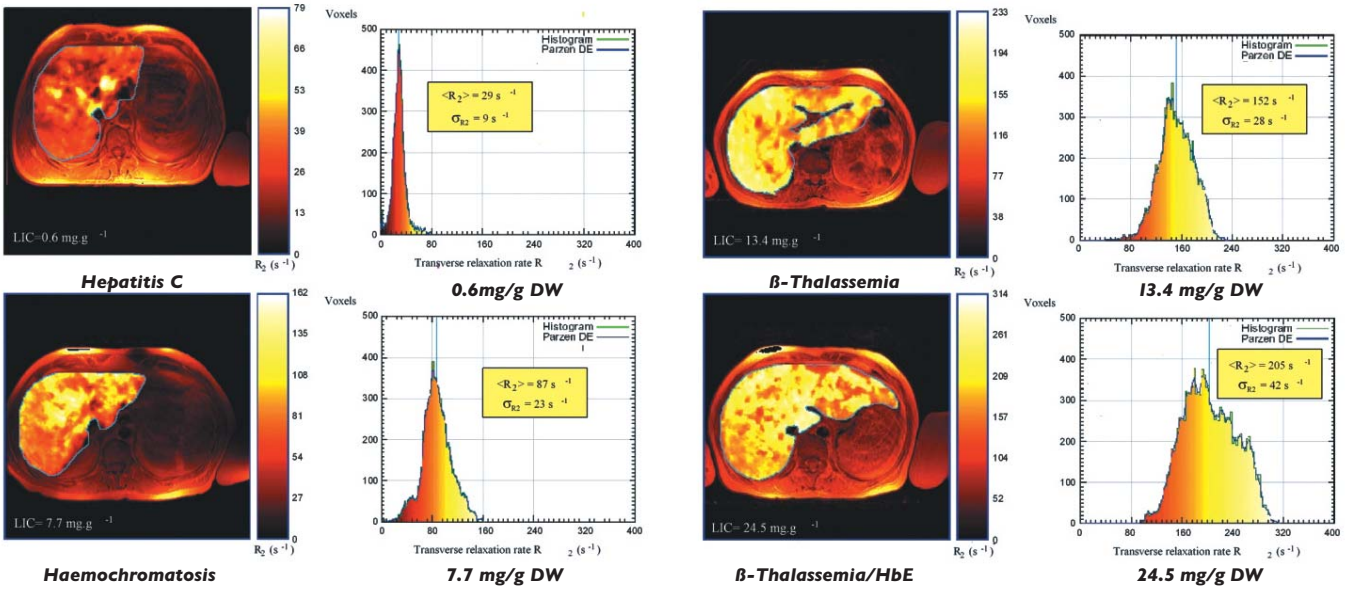
FerriScan™ takes this liver iron distribution into account by analysing the entire liver in its calculation of liver iron concentration. In comparison, analysis via liver biopsy is via a relatively small sample which may unknowingly be taken from an area that does not accurately represent the iron concentration present in other sections of the liver.

FerriScan™ is available at Southern X-ray Clinics, The Wesley Hospital, Brisbane.

Ph: (07) 3371 9588

Cost: $495 no Medicare rebate

Figure Four - MRI Scan and histogram results



Bulk Billing Echocardiography

Service Now Available

Echocardiography is a non-invasive ultrasound procedure aimed at assessing gross cardiac pathology.
It has become a frontline technique in the routine clinical assessment of the cardiac patient.

Echocardiography is a powerful diagnostic tool in the assessment of:

- **Left ventricular (LV) size, LV hypertrophy, LV systolic function, and LV diastolic function**
- **Left atrial size**
- **Right heart size and function, as well as an estimate of pulmonary artery pressure**
- **Valvular stenosis and regurgitation**
- **Valve replacements**
- **Pericardial disease**
- **Congenital heart disease**
- **Thrombus, endocarditis, cardiac tumours, and other anomalies**

Andrew Carter, an Echocardiographer with over ten years experience in this field, will be performing the service.

All echocardiograms will be reported by Dr Andrea Riha. Dr Riha is a graduate of University of Queensland. She is a trained Cardiologist and has further specialised in vascular medicine at Monash Medical Centre in Melbourne. Dr Riha is the Director of The Wesley Vascular Centre in Brisbane.

Please note- echocardiography service not available for children under the age of 13.

Echocardiograms are available

Mondays:

Tweed Valley Radiology
50 Wharf Street
Tweed Heads
Ph: (07) 5536 3688

Fridays:

Gold Coast Medical Imaging
Pacific Private Clinic
123 Nerang Street Southport
Ph: (07) 5591 5422

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TWEED HEADS
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