



IMAGING UPDATE

THE OFFICIAL NEWSLETTER OF GOLD COAST MEDICAL IMAGING/TWEED VALLEY RADIOLOGY

CT ARTERIOGRAPHY

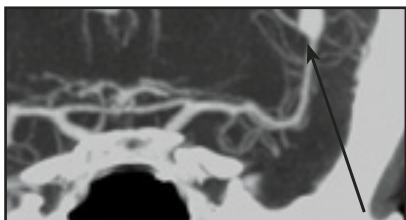
The development of multi-slice CT has provided radiology with the ability to acquire high quality data and produce anatomical images like never before. This data can be viewed as either thin axial images (ie; as thin as 1 mm slices or less) or reconstructed utilising the latest computing technology to view regions of the body in 3-dimensions.



Intracranial Circulation

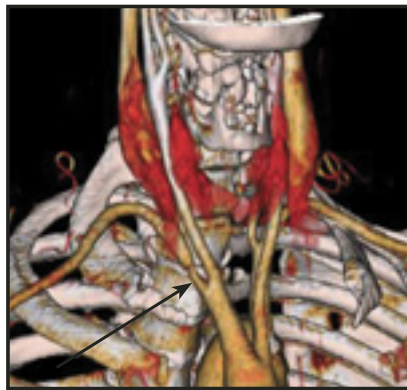
The ability of GCM's multi-slice CT scanners to acquire large 'volumes' of anatomical data (eg; typically 300+ images) is particularly advantageous in vascular studies. CT arteriography is non-invasive, requires a single venepuncture for the administration of contrast and can be completed in less than 5 minutes and at less cost than digital subtraction angiography (DSA).

The speed of data acquisition with multi-slice CT scanners enables blood vessels to be imaged in the arterial 'phase' (ie; immediately after contrast injection) and/or venous 'phase' (ie; delayed scan



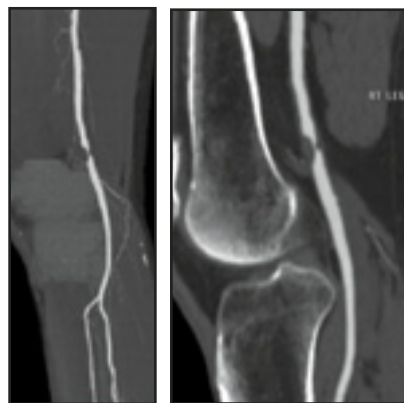
Aneurysm Middle Cerebral Artery

post arterial phase) depending on the required examination. Once the study acquisition is completed the image data is transferred to GCM's GE Advantage Workstations for reconstruction and viewing in multiple planes or 3-D depending on the Radiologist and referring clinician requirements.



Subclavian Artery Stenosis

CT arteriography has clinical application in the abdomen, particularly in the kidney, pancreas, mesenteric vessels and liver. The examination is also used in evaluating the aorta, ilio-femoral vessels, renal artery stenosis and intra-cranial circulation.



Right Popliteal Stenosis

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- NEW CLIENT RELATIONS MANAGER

Medical Ball Competition Winners

Thank you to all the doctors who entered GCM's Medical Ball Competition.

The lucky winners were:

- Dr Arthur Belthikiotis
- Dr Tony Bose
- Dr Sally Kervison
- Drs Pia and Mark Petersen
- Dr Austin Sterne
- Dr David Walkden-Brown

Winter Wonderland is the theme for this year's GCDGP Medical Ball on Saturday 21 June. We are sure a fun time will be had by all!



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 NERANG. TEL: (07) 5596 4066

SOUTHPORT. TEL: (07) 5591 5422
 TWEED HEADS. TEL: (07) 5536 3688
 TWEED HEADS SOUTH. TEL: (07) 5524 2424
 THE TWEED HOSPITAL. TEL: (07) 5506 7419



Introduction of a New High Speed Bone Densitometry Unit at GCMI, Benowa

GCMI's Benowa practice now offers a Bone Densitometry service. This new state-of-the-art high speed, high definition Norland DEXA unit has enabled examination times to be reduced from 30 minutes as with older generation machines to less than 15 minutes. This reduced examination time significantly enhances patient comfort whilst maintaining highly accurate clinical results.

Earlier this year the same generation Norland unit was installed at our Mermaid clinic. With only Norland

DEXA units operating across GCMI and Tweed Valley Radiology sites (ie; Benowa, Mermaid and Tweed Heads) patients and referrers can expect highly accurate and consistent results when referred for bone densitometry examinations. Accuracy of results will still be maintained even if patients have had previous bone densitometry examinations on other units.

For any queries regarding these new services please do not hesitate to contact our Benowa or Mermaid Beach clinics.

Tweed Valley Radiology Ultrasound Upgrade



Another example of GCMI's continuing commitment to service excellence by utilising the latest in medical imaging technology is the upgrade of the ultrasound service at the Tweed Valley Radiology Wharf Street clinic.

From April 2003, patients needing ultrasound examinations in the Tweed region can access the latest in ultrasound technology at the Wharf Street site. Clinical features of the new system include Sono CT (compound imaging), XRES (MRI technology), Panorama extended field-of-view and 3-D imaging.

The addition of this upgraded service at Wharf Street compliments this same 'high-end' ultrasound technology at GCMI sites at The Tweed Hospital, Burleigh Waters and Southport.

New Mammography Service at GCMI, Burleigh Waters

We are pleased to announce that from April 2003, a new mammography breast imaging service was introduced at our Treetops clinic, Burleigh Waters.

The installation of this state-of-the-art GE 800T Senograph unit will enable patients to access a comprehensive breast imaging service including mammographic

and ultrasound imaging. Examinations will be performed and reported by highly experienced staff including GCMI Radiologists who are accredited with Breastscreen Queensland.

All enquiries and appointments can be made by phoning our Burleigh Waters clinic on 5593 6955.

Shorter Waiting Lists at GCMI/TVR

With GCMI/TVR's upgrading of equipment and success in recruiting and managing staff rosters, we are able to offer patients decreased waiting times for all appointments. Our centralised booking service enables reception staff to view appointments at all clinics and increase availability of appointment times for patients. In most cases we offer a same day service.

DYNAMIC MUSCULOSKELETAL ULTRASOUND

This is a rapidly expanding modality with the advantages of being affordable (a Medicare rebate is available, but only when referred by a Medical Practitioner), having no radiation dose and with readily available equipment. Any superficial structure not obscured by bone or air can be examined. Dynamic scanning as the structures move aids diagnosis.

Plain x-rays are often complementary to musculoskeletal ultrasound and if they have not already been recently performed it is advisable to have them taken at the same time as the examination. The x-rays and any previous imaging of the area of concern should always be available for comparison and evaluation at the time of the examination.

There is poor visualisation of very deep structures, especially in obese patients, but this is becoming less of a problem with newer generation equipment.

Ultrasound enables visualisation of soft tissues. How accurately the patient can localise an abnormal area influences the success rate of the examination. In general, the smaller the area of concern, the greater the diagnostic yield. Diffuse pain syndromes, with multiple tender points, have a low diagnostic yield with ultrasound. Painful or "clicking" movements can be studied as the patient reproduces them. We look for abnormalities of contour, size and texture. Comparison with normal structures is made when necessary. Fluid appears black on the screen and is a valuable marker for pathology. For example, oedematous tissue is 'blacker' than normal, as are muscle tear haematomas, swollen bursae, swollen synovium and inflamed nerves.

Colour Doppler scanning is frequently used. Colour Doppler Energy may become more useful (as equipment improves) in differentiating inflammation (with increased blood flow) from tendinosis (with decreased blood flow) in swollen, texturally abnormal tendons.

Musculoskeletal ultrasound is very

clinically orientated. The diagnosis is often made on real time scanning, then images taken to demonstrate the abnormality, whereas with CT, Magnetic Resonance Imaging and x-rays the diagnosis comes from the images already performed. The clinical indications for musculoskeletal ultrasound are expanding almost daily.

Interventional musculoskeletal ultrasound has developed rapidly over the past decade. It can be used for diagnostic and/or therapeutic purposes. Ultrasound guidance of a needle into a

structure removes the doubt inherent in the blind injection. This is useful particularly in medicolegal cases as well as in sports medicine. If a structure is visible on ultrasound, it can be injected with the appropriate technique.

Should you have any queries regarding musculoskeletal ultrasound examinations please feel free to contact our Radiologists at our Southport, Burleigh Waters, Tweed Hospital or Wharf Street (Tweed Valley Radiology) sites.

Musculo-skeletal Ultrasound Quick Reference Guide

Shoulder

- Rotator Cuff* - inflammation, tears, and calcification.
- AC Joint* - instability & effusion
- Biceps* - effusions, inflammation, tears, impingement of subdeltoid bursa, supraspinatus, or subscapularis.

Elbow

- Joint effusions, loose bodies, and synovial swelling.
- Injuries to ulnar, medial, and radial nerves.
- Olecranon bursitis.
- Extensor/Flexor tendon tears and calcification.

Hand/Wrist

- Tendon tears and inflammation.
- Ganglions.
- Joint effusions & synovial thickening.
- Carpal tunnel
- Post operative carpal tunnel release.

Ankle

- Achilles Tendon* - tears, inflammation, and bursal swelling.
- Tarsal Tunnel* - tears, inflammation, and nerve lesions.
- Ganglia*.
- Ligaments* - tears and inflammation.

Thoracic Outlet

- Cervical ribs
- Compression of nerves and/or major vessels.

Forearm

- Nerve entrapment, muscle/tendon tears, and inflammation.

Hip/Groin/Buttocks

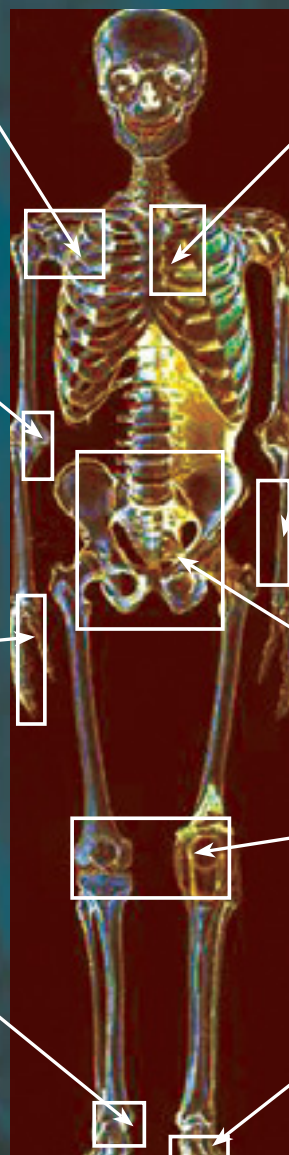
- Hip* - Iliopsoas and trochanteric bursitis, labral tears (clicking hips).
- Groin* - Hernias, muscle/tendon tears and calcification.
- Buttocks* - Muscle tears, sciatic nerve lesions, and hamstring origin tears.

Knees

- Baker's Cysts, effusions, and tendons.
- Tears/calcification of infrapatellar tendons.

Foot

- Morton's neuroma.
- Foreign bodies.
- Plantar fascia tears.



Combined First Trimester Screen



Nuchal Translucency ultrasound assessment in the 11-14th week of pregnancy has been available for over five years. GCM I has been accredited by the Fetal Medicine Foundation to use their licensed computer software for over two years. This involves ongoing sonographer accreditation and radiologist involvement. Through this accreditation, in addition to ongoing training, GCM I is able to provide a high quality Nuchal Translucency assessment and report.

Most doctors would be aware of the benefits of ultrasound to detect chromosomal abnormalities. However, to increase detection rate sensitivities further, GCM I can incorporate maternal serum biochemistry results into the risk assessment.

The Fetal Medicine Foundation software allows Free Beta HCG and PAPP-A results from pathology reports to be

added into the risk assessment. PAPP-A levels tend to decrease, and Free Beta HCG levels tend to increase, in pregnancies affected by Trisomy 21. This biochemical information, when combined with the maternal age, gestational age and fetal nuchal translucency measurement, increases sensitivity to around 90% whilst maintaining a false positive rate of up to 5%.

Other benefits of the 11-14 week scan include:

- Accurate dating of the pregnancy
- Diagnosis of multiple pregnancies
- Detection of early pregnancy failure
- Assessment of fetal structures (such as the brain, limbs, nasal bone and abdominal wall) and detection of some of the more severe structural abnormalities
- Non invasive procedure well tolerated by the patients

GCM I would prefer all patients to have the biochemistry results available at the time of the Nuchal Translucency assessment ultrasound. Patients should have blood tests two to three days prior to their ultrasound appointment.

These combined results will be available by the next working day.

New Client Relations Manager Joins GCM I

GCM I is pleased to welcome Yvette Safier to the GCM I team. Yvette has taken up the position of Client Relations Manager, previously held by Leanne Gilpin who has transferred to an Administration role in GCM I head office.

Most of you will know Yvette in her role over the past year and a half with QML Pathology as the Medical Liaison Officer for the Southport Laboratory. Yvette was also the President of the Gold Coast branch of the Association of Medical Receptionists in 2002 and this year holds the position of Vice President.

Yvette has qualifications in Nursing, Exercise Science, Education and Business. Yvette shares the GCM I philosophy of commitment to excellence and combined with her extensive knowledge and experience in the medical industry, GCM I is confident that Yvette will prove to be a great asset and provide you with exceptional service.

Yvette can be contacted on 5588 3705 or 0423 048 725.

TO ASSIST US IN ENSURING THE RELEVANCE OF TOPICS COVERED IN FUTURE EDITIONS OF **IMAGING UPDATE**, WE LOOK FORWARD TO YOUR FEEDBACK ON THE FOLLOWING:

1. DO YOU HAVE ANY COMMENTS RELATING TO **IMAGING UPDATE**?

2. WHAT TOPICS WOULD BE OF INTEREST TO YOU IN FUTURE EDITIONS OF **IMAGING UPDATE**?

3. WE WELCOME THE OPPORTUNITY TO SHOWCASE OUR STATE-OF-THE-ART FACILITIES. WOULD YOU LIKE US TO CONTACT YOU TO ARRANGE A TOUR AT A TIME THAT SUITS YOU? YES NO

Name: _____ Practice: _____

Address: _____

Phone: _____ Fax: _____ Email: _____

Speciality/Interest: _____

PLEASE NOTE THAT THE INFORMATION COLLECTED IN THIS FORM WILL BE USED FOR GCM I PURPOSES ONLY.