

3D imaging expands treatment possibilities

Victorian dentists now have access to the latest three-dimensional imaging technology.

Developed specifically for 3D imaging of the teeth and jaws, Cone Beam Computed Tomography (CBCT) is a low dose digital radiation system.

Newly established firm Dental & Medical Diagnostic Imaging (DMDI) has just installed the Japanese-made equipment in its Camberwell premises.

According to DMDI's Managing Director, Ms Pamela Gilbert, the CBCT hugely expands diagnostic and treatment possibilities for patients and provides:

- images with greater clarity;
- shows things which X-rays would not reveal;
- the radiation dose to the patient is much less than for conventional Computed Tomography (CT) scanners but still higher than for conventional 2D dental imaging;
- speedy results - the scan takes less than 10 – 15 seconds and the patient leaves the room 10 minutes later with a CD in hand; and,
- the cost is comparable to traditional CT scans.

Having suffered from lower jaw problems and enduring X-rays lead Ms Gilbert to the CBCT technology. And this revealed a business opportunity – the first company to offer this service in Australia. This journey to embracing CBCT has involved a number of overseas trips, seeking the best equipment - the Morita Accuitomo 170.

As her company name states, the business is aimed squarely at the dental and medical professions.

"I am excited at the possibilities that the CBCT will offer dentists in diagnosing and treating their patients," Ms Gilbert said. "This will be a new dimension and provide dentists with new possibilities and offer a new standard of professionalism."

CBCT is a low dose scanning system which has been specifically designed to produce 3D images of the maxillofacial skeleton. Scanners use back-projection reconstructed tomography to acquire data of the area of interest through a single or partial rotation of the conical X-ray beam and reciprocal image receptor. While CT acquires image data using rows of detectors, CBCT exposes the whole section of the patient over one detector – these data are then used to generate individual slice images.

As the patient is seated and the motion of the gantry is a simple rotation, the main complexity of the CBCT system lies in the detector and the data processing technology.

After making the necessary checks concerning the area to be radiographed, a test (scout) is run and the required image taken by a Radiographer. The image is then sent electronically to an independent Radiologist who checks it and provides an in depth diagnostic report, sent back via web link. Satisfied with the result, the image is put on a CD for the patient to take away with them, and the original copy on CD is sent to the referring practitioner. Using a secured website, clinicians can view their patients' images online or – depending on the size – they can be emailed.

For one week leading London CBCT operator Dr Andrew Dawood* allowed Ms Gilbert to see his equipment in operation and observe his techniques. With her equipment due from Japan days later, Ms Gilbert was back in Melbourne to ready her suite in Camberwell for its installation by a Japanese technician. A fully-trained technician is on-hand in Melbourne.

Accreditation company Quality in Practice Pty Ltd has accredited DMDI.

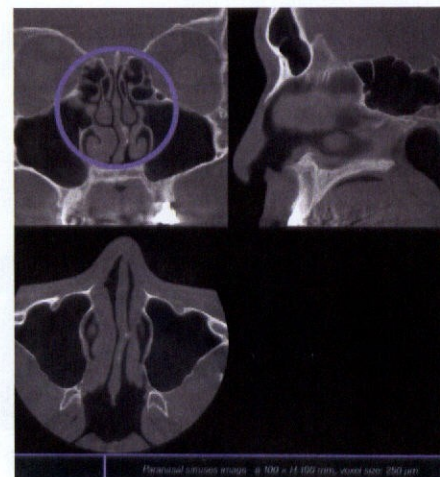
The company will bulk-bill health card holders while other patients will be invoiced.

Because of the complexity and newness of CBCT, Ms Gilbert intends to run information sessions for dentists on the premises at – Unit 9, 1175 Toorak Rd., Camberwell, "A Centre of Excellence" Pamela can be contacted on (03) 9889 1771, or pamelag@dmdi.com.au

* Dr Dawood co-authored a paper on CBCT in the British Dental Journal (Volume 207, No. 1 July 11 2009) – *Cone beam CT in dental practice*.

Copies of this paper and other specific papers on Endodontics and associated jaw problems can be sent to readers on request from DMDI. Referral pads are also available by email to referral@dmdi.com.au or download from the website at www.dmdi.com.au

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