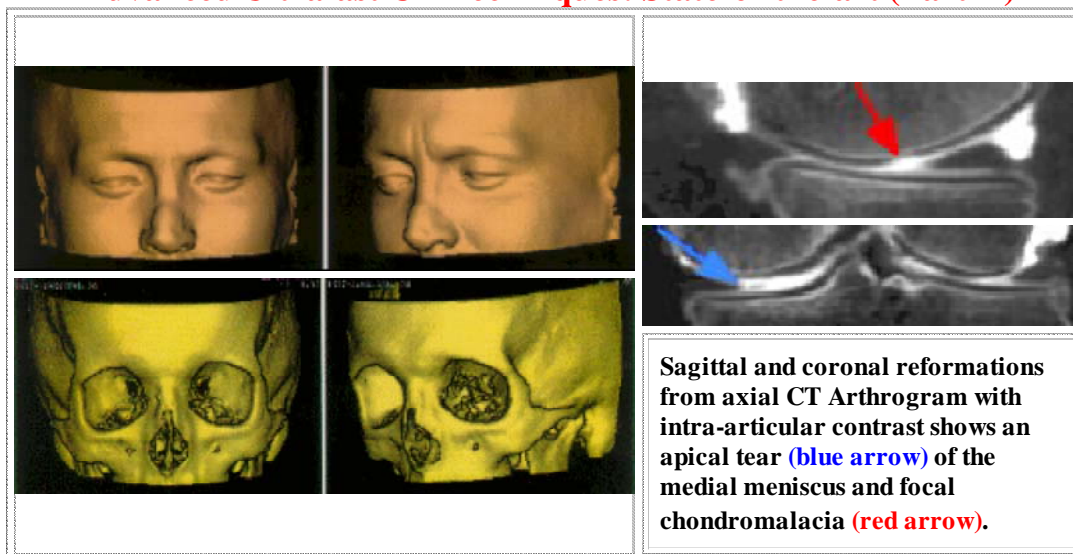


### Advanced Ultrafast CT Techniques: State-of-the-art (Part II)



**Q. Please explain the above images.**

The images on the left are **4D reconstructions** performed on high-resolution axial images of a **helical CT** sinus series (1 mm resolution). The **top-row** images are **4D surface rendering** shown here in two angles (frontal and oblique). The **bottom-row** images are at the same angles but showing **4D bone reformations**. The image on the right is a coronal reformation from a **CT Arthrogram** with intra-articular contrast showing an apical tear of the medial meniscus (arrow) in a patient with a pacemaker unable to undergo an MRI study.

**Q. How do you obtain these incredible images?**

The axial images were obtained on the **fast helical CT scanner** and sent to an **Advanced 4D Silicon Graphics Workstation**. The 4D and multiplanar reconstructed images were then obtained on the workstation. These reconstructions can sometimes help in surgical planning.

**Q. Tell me more about this Advanced 4D Workstation.**

It is a **Silicon Graphics Workstation** which is a very fast and powerful computer equipped with state-of-the-art imaging tools that allow for amazing fast image manipulations, including 4D and multiplanar reconstructions. These manipulations can be performed on **CT** and **MRI** images. Other features include **coronary calcium scoring**, **virtual endoscopy** (CT bronchoscope and colonoscopy), **3D and 4D MR** and **CT angiography**, **4D Dental scan**, etc. Of course, routine CT scanning (neuro

and body imaging) with incredible resolution and speed is an inherent part of this ultrafast helical CT scanner. It is truly the best scanner in the area.

For more information, or for any questions or concerns, please call me personally.

Ray H. Hashemi, M.D., Ph.D.,  
Director

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