

Cardiac Visions

*A quarterly e-newsletter of the
Indian Association of Cardiac Imaging (IACI)*

Indian Association of Cardiac Imaging (IACI)

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Welcome Back!

Dear Friends.

After a not so brief hiatus of nearly 1 year, we bring to you the **second edition** of "Cardiac Visions". Just as the first issue coincided with the formal introduction of the ISCI at Bangalore last year, **this issue comes right after the 1st annual meeting of the society held on 23-25th September, 2011** in Delhi.

To update our readers, the society activities kickstarted last year with the launch of our website www.iaciind.org. Dr Hemant Telkar and Dr VB Nori and his team deserve all the credit for making the website functional, with information about the society and its objectives, links to the newsletter, news updates, ISCI on facebook and twitter and the google group. **Facebook and google group of ISCI serve as important platforms for member interactions as well as expert opinions on cases.** The society is **currently being registered in Mumbai (a very painstaking process, again kudos to Hemant!)**. Enrolment of members should begin immediately afterwards. While all radiologists can become members, allied specialists are welcome to join as associate members, initially for a period of 3 years. The criteria for further continuation of membership will be circulated shortly.

During this year, the **society made several interactions with the Society of Cardiovascular Magnetic Resonance**, a leading global organization in CMR education and research. It was formally introduced at the SCMR's annual meeting in Nice, France in early 2011, followed by **endorsement of ISCI's Annual meeting in Delhi by the SCMR**. Plans are afoot to make **ISCI the Indian Chapter of the SCMR** by the end of this year.

The **1st Annual meeting was a great success, with 117 registered delegates**. The theme of the meeting was "**Essentials of Cardiac CT and MRI**". Radiologists and a small number of cardiologists from various parts of India (and the middle east!) attended the meeting. There were **special sessions including an imaging quiz, CMR safety, radiation concerns and Hands-On Cardiac CT workshops**. The **workshop sessions on the last day were literally sold out** with 32 participants as against our original cut-off of 20! Sriram and I sincerely thank the speakers and the delegates for making this a memorable event.

Plans for the coming year include a **CMR training workshop in Mumbai in March 2012**, and the **2nd Annual Meeting of the IACI in Bangalore on December 1-2, 2012**.

This edition of the newsletter has certain new features, including latest news on cardiac imaging, links to education resources and fellowship programs in the subspecialty. We **welcome Dr Vineet Sethia as an associate editor** of the newsletter. We would be happy to receive your suggestions in helping us improve upon this effort.

Heartily yours,

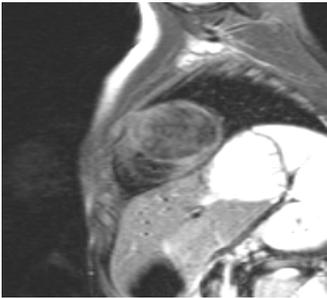
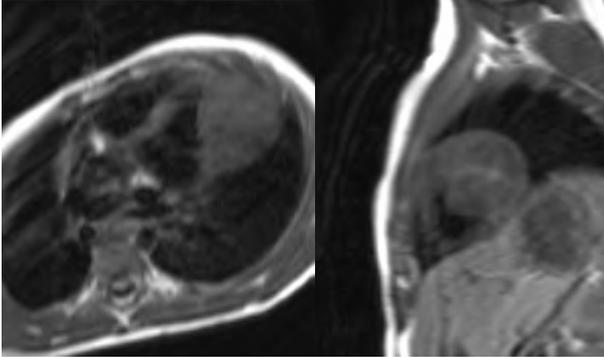
Gurpreet

Narendra

Vineet

Quiz of the month

- 3 yr old child with Acyanotic CHD
- Echocardiography showed ASD with left ventricular mass.
- What tumor is this?



- Single line answer and only complete diagnosis will be accepted as correct.
- Please send in your answers, along with your name and department/institution by 15th October 2011 via email to: gulatigurpreet@rediffmail.com.
- Answer will be available in the next issue of this newsletter.

Case of the Month: C2/11/2011

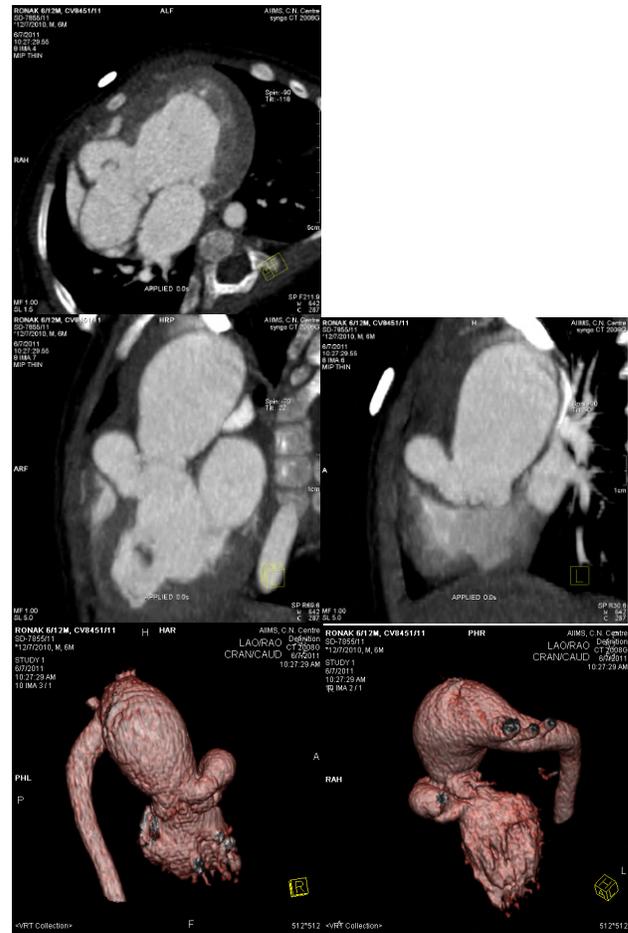
Contributed by:

Reference:

Aortico–left ventricular tunnel: 35-year experience.

Martins et al. J Am Coll Cardiol, 2004; 44:446-450, doi:10.1016/j.jacc.2004.04.032

- 10 month old child with Acyanotic CHD presented with
- Echocardiography showed Aortico–left ventricular tunnel, LVH, enlarged LV, grossly dilated aortic root -?? Truncus arteriosus with severe truncal regurgitation, L-R VSD, PAPVC and LVEF of 60%.
- CT angiography showed a tubular channel arising from right coronary cusp and communicating with LV. The ascending Aorta was dilated and RCA was arising from tip of the tunnel.
- Aorta LV tunnel repair was done – the tunnel was excised and defect was closed from both LV and RV side.
- Post –Operative ECHO showed no residual tunnel, moderate LV dysfunction mild AR and anteroseptal hypokinesia



Aortico–left ventricular tunnel is extremely rare (0.001% patients with congenital heart disease). Aortico–LV tunnel can be diagnosed by transthoracic ,transesophageal and fetal echocardiography , CTA and magnetic resonance imaging. A significant amount of "aortic regurgitation" in infants should raise the possibility of this lesion. Associated lesions occurred in 45%. Catheterization should be reserved for patients with unclear non-invasive findings or transcatheter closure. Surgery is recommended for most patients. Good post-operative long-term outcome is seen in most of the patients. It should be differentiated from a RSOV. Sinus rupture generally occurs inferior to the RCA ostium

Upcoming Cardiac Imaging Meetings

European Society for Cardiac Radiology 2011

Oct 27-29, 2011

Amsterdam, Netherlands

<http://www.escri.org>

Contact: info@circlecvi.com

American Heart association 2011

Nov 13-16, 2011

Orlando, USA

<http://scientificsessions.americanheart.org>

Contact: info@circlecvi.com

Radiological Society of North America 2011

Nov 25-30, 2011

Chicago, USA

<http://rsna2011.rsna.org/Meetings.cfm>

Contact: info@circlecvi.com

The Society for Cardiovascular Magnetic Resonance 2012

Feb 2-5, 2012

Orlando, USA

<http://www.scmr.org>

Selected Abstracts in Cardiac Imaging: Clinical and Research

SCCT guidelines on radiation dose and dose-optimization strategies in cardiovascular CT

Halliburton et al. Journal of Cardiovascular Computed Tomography (2011) 5, 198–224

(http://www.scct.org/documents/guidelines_radiation.pdf)

Society of Cardiovascular Computed Tomography has produced a guideline document to review available data and provide recommendations regarding interpretation of radiation dose indices and predictors of risk, appropriate use of scanner acquisition modes and settings, development of algorithms for dose optimization, and establishment of procedures for dose monitoring.

Iterative image reconstruction techniques: Applications for cardiac CT

Renker et al. Journal of Cardiovascular Computed Tomography 2011;5(4):225-230

([http://www.journalofcardiovascularct.com/article/S1934-5925\(11\)00179-1/abstract](http://www.journalofcardiovascularct.com/article/S1934-5925(11)00179-1/abstract))

Traditional limitations of cardiac CT are related to image noise, blooming artifacts from calcifications and stents, and radiation exposure. These limitations can be ameliorated by the use of iterative reconstruction in image space (IRIS) instead of traditional filtered back projection (FBP) image reconstruction techniques. The subjective image quality of IRIS reconstructions was rated higher than FBP reconstructions. Image noise was lower with IRIS than with FBP. The volume of stents and heavy coronary artery calcifications measured lower in IRIS reconstructed series compared with FBP. Substantial radiation reduction seems feasible without associated increases in image noise.

Can Differences in Corrected Coronary Opacification Measured With Computed Tomography Predict Resting Coronary Artery Flow?

J.W. Chow et al. J Am Coll Cardiol, 2011;57:1280-1288

(<http://content.onlinejacc.org/cgi/content/short/57/11/1280>)

The study was done to determine whether differences in corrected coronary opacification (CCO) within coronary lumen can identify arteries with abnormal resting coronary flow. Attenuation values of coronary lumen were measured before and after stenoses and normalized to the aorta. Changes in CCO were calculated, and CCO differences were compared with severity of coronary stenosis and Thrombolysis In Myocardial Infarction (TIMI) flow at the time of invasive coronary angiography. The study showed changes in CCO across coronary stenoses seem to predict abnormal (TIMI flow grade <3) resting coronary blood flow

Long Term Prognostic Value of Stress Perfusion CMR Study for the Prediction of Cardiovascular Death and Non Fatal Acute Myocardial Infarction in Patients with or without Preserved Left Ventricular Ejection Fraction .Tairo Kurita et al.

Circulation. 2010;122:A20093

http://circ.ahajournals.org/cgi/content/meeting_abstract/122/21_MeetingAbstracts/A20093Conclusions: Study was done on known or suspected CAD. Stress-induced ischemia on stress perfusion cardiac magnetic resonance imaging (CMR) and myocardial infarction on (late gadolinium enhanced)LGE CMR were qualitatively determined. Major adverse cardiac events (MACE) was defined as cardiovascular death and non fatal acute myocardial infarction .Negative stress perfusion CMR imaging and LGE CMR imaging studies showed good prognostic value even in patients with decreased LVEF. Cine MRI may provide the incremental prognostic value to stress perfusion CMR imaging and LGE CMR .

Strong cardiovascular prognostic implication of quantitative left atrial contractile function assessed by cardiovascular magnetic resonance in patients with chronic hypertension. Matthew Kaminski et al.

Journal of Cardiovascular Magnetic Resonance 2011, 13:42

<http://jcmr-online.com/content/13/1/42/abstract>

A consecutive group of patients with chronic hypertension but without significant valvular disease or prior MI underwent clinically-indicated CMR for assessment of left ventricular (LV) function, myocardial ischemia, or viability. Calculation of LA volumes used in determining LA emptying functions was performed using the biplane area-length method. The conclusion of study was that in hypertensive patients at risk for left ventricular diastolic dysfunction, a decreased contribution of LA contractile function to ventricular filling during diastole is strongly predictive of adverse cardiac events and death.

Incremental Value of Adenosine-induced Stress Myocardial Perfusion Imaging with Dual-Source CT at Cardiac CT Angiography By Rocha-Filho et al

Radiology February 2010 254:410-419;

<http://radiology.rsna.org/content/254/2/410.abstract>

A combined dual-source CT protocol for assessment of myocardial perfusion and coronary anatomy is feasible, with acceptable contrast material and radiation doses; moreover, the addition of myocardial stress perfusion CT improves the diagnostic accuracy of cardiac CT angiography and enables simultaneous assessment of anatomy and perfusion in a single examination.

A Major Technological Breakthrough: FDA Approves Medtronic's Revo MRI-Compatible Pacemaker

<http://wwwp.medtronic.com/Newsroom/NewsReleaseDetails.do?itemId=1297193518258>

Cardiac Imaging Portal | Latest CT, Nuclear Imaging News

<http://www.healthimaginghub.com/portals/cardiac-imaging-news-article.html>

Observership and Fellowship courses in cardiovascular imaging -

<http://www.scmr.org/Education/fellowships.html>

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