PICS-AICS
Pediatric and Adult Interventional Cardiac Symposium
Daily Briefing

TUESDAY

The PICS Achievement Award Goes to Dr. Horacio Faella!

By Karim Diab, MD

The new winner of the *PICS Achievement Award* was honored as part of the *PICS 2012* last night. This award is designed to encourage and recognize investigators of promise, who have contributed exceptionally to the field of interventional cardiology in congenital and structural heart disease.

Highlights of this year's Achievement Award Winner:

- Dr. Faella was born in 1946 in Buenos Aires, Argentina, the first son of Alice and Jose Faella.
- He is married to Isabel, and has two daughters and one son.
- He graduated with honors from the prestigious Buenos Aires University Medical School in 1970.
- He finished his cardiology training at the Rawson Hospital in Buenos Aires.
- Due to his natural leadership qualities, he became the chief fellow.
- He subsequently took up pediatric cardiology and invasive cardiology at the Children's Hospital of Buenos Aires.
- In 1987 he was hired as an Assistant Professor at the Children's Hospital of Buenos Aires JP Garrahan.
- He became the Head of the Pediatric Catheterization Laboratory, a position he has held for the last 20 years.
- He has participated in several national and international meetings as a renowned speaker, written over 50 papers, and actively participated in activities both in public and private clinical practices.
- He has authored or coauthored over 200 abstracts presented in national and/or international meetings, and edited 4 books in pediatric cardiology in Argentina.
- He was honored 9 times for publishing high standard papers.
- His superb work was acknowledged by the American College of Cardiology in 1996.
- He subsequently became one of the founders of SOLACI, the President of the Argentinian Society of Cardiology, the President of the Argentinian Cardiology Foundation, the President of the InterAmerican Society of Cardiology (from 2000-2002), and the President of the World Congress of Cardiology in 2008.
- He was also a member of the organizing committee of the World Congress of Pediatric Cardiology and a *PICS* Co-Director (2005).

It is worth mentioning that Dr. Fella has participated in all *PICS* meetings since the first *PICS* in Boston 1997! And like most Argentinians his main other passion is soccer!!

Congratulations from the *PICS* family and CCT!

Tuesday PICS Preview

By Karim Diab, MD

Welcome to the third day of PICS!

After completing a full day of live cases, hot debates and a series of didactic lectures in multiple breakout sessions, *PICS* continues on Tuesday with more live case transmissions, as well as 5 additional breakout sessions including a major session on stenting in CHD and the *Heart/Brain Symposium and PFO Summit.*

The morning will start with live case transmissions. A total of 9 cases will be transmitted; this time during three consecutive sessions from the following sites:

- Nationwide Children's Hospital, Columbus, OH USA (3 cases).
- Rush University Medical Center, Chicago, IL USA (3 cases).
- Montreal Heart Institute, Montreal, Quebec, Canada (3 cases).

Drs. J. Cheatham and his team will transmit the following live cases: transcatheter PV implantation in a patient with TOF/PA s/p repair and using ICE and 3DRA imaging techniques, treating SVC stenosis and pulmonary vein stenosis, and perventricular implantation of Melody TPV.

From Rush University in Chicago, Dr. Hijazi and the team will perform cases of transcatheter rehabilitation of the branch PAs in a patient with Williams Syndrome, ASD closure for a fenestrated ASD with ICE guidance, and stenting of the LMCA in a patient with William Syndrome.

Early Career Interventionalists' Meeting at PICS 2012

The Pediatric Congenital Interventional Cardiology Early-Career Society (*PICES*), founded last year at *PICS* will have a breakout session this afternoon at 2 pm in Ballroom H, on the 5th floor.

The group's founding mission is to support the clinical, and academic development of early career congenital interventionalists, and provide a networking opportunity to discuss clinical case challenges. All early career interventionalists are invited to attend including international attendees and those at residency or fellowship training levels. The breakout will include a lecture from Dr Henri Justino from Texas Children's Hospital on how to "Create a Niche" when starting one's career, as well as clinical case discussions and updates on potential collaborative multi-center trials. Discussion on how younger interventionalists may get involved in mission trips to the developing world will also be discussed. Please come along if you would like to get involved.

From Montreal, Dr. R. Ibrahim and his team will perform live cases of PMVSD closure using the Amplatzer PMVSD II device, ASD closure using the Gore Septal Occluder, and, if we are lucky, a possible case of percutaneous PDA closure in a premature newborn with trans-thoracic echo guidance.

After the morning live cases, the afternoon will continue with the finals for oral abstracts, followed by 5 breakout sessions. Below is a summary and highlight of the events taking place during today's breakout sessions.

The first breakout session is for the young interventionalist group, and will be held in the Chicago Ballroom H, 5th Floor. This will include a guest lecture on revascularization of thrombosed vasculature in pediatric patients, a series of short case presentations followed by the *PICES* meeting.

The second session, running simultaneously in the Grand Ballroom Salon I/II 7th Floor, will focus on device closure of defects. This will include discussion of topics such as: PDA closure in adults, ASD closure using bioabsorbable devices, and new devices for membranous VSD closure. This session will feature two Hot Debates: the first on ASD closure being done only by interventionalists trained in CHD (Pro: Dr. T. Forbes, Con: Dr. C. Kavinsky), and erosion after ASD closure is unpredictable and hence ASD closure should not be done in the cath lab (Pro: Dr. M. Ilbawi, Con: Dr. J. Bass). This session will feature an interesting discussion on device erosion with a panel discussion on the topic that will review this sometimes unpredictable complication, and provide some recommendations.

The third session (held in the Grand Ballroom Salon III, 7th Floor) will focus on percutaneous mitral and tricuspid valve therapies. After reviewing some pathological specimens, there will be discussion on what patients to avoid in

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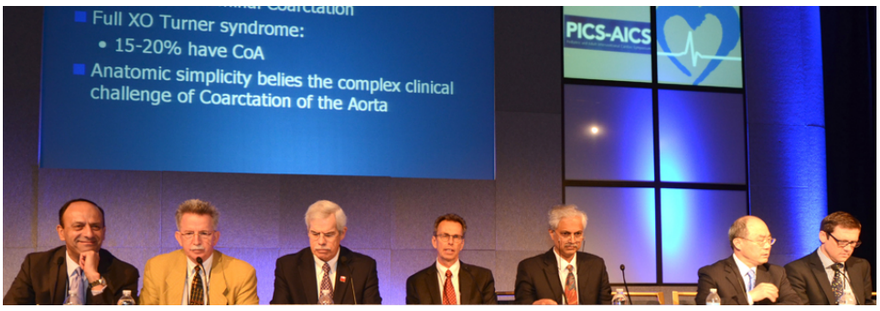

percutaneous MV repair, update on the REALISM study, and world experience in transcatheter TV replacement. This session will have a Hot Debate on whether percutaneous MV therapies should be restricted to patients not suitable for surgical repair (Pro: Dr. P. McCarthy, Con: Dr. R. Makkar).

The fourth breakout session on Tuesday (in the Grand Ballroom Salon I/II, 7th Floor) will bring a major up-to-date review on the options for stent implantation in CHD, the outcomes of the COAST II study, treatment options for neointimal proliferation after stenting, evolving stent design and customizing stents to the anatomy. This session will end with a Hot Debate on Stenting PDA/banding PAs should be the first step for HLHS palliation (Pro: Dr. M. Galantowicz, Con: Dr. E. Bacha).

The fifth session on Tuesday will feature the *Heart/Brain Symposium and PFO Summit,* and will be held in the Grand Ballroom Salon III, 7th Floor. Dr. P. Weinberg will go over some pathological PFO and LAA specimens. Topics will include: discussion of device choice and when to intervene for residual shunting, update on the PFO trials data, LAA occlusion, evolving LAA occlusion devices, and the influence of valve delivery approach on the incidence of stroke in TAVR. The symposium will end with the 7th debate of the meeting on whether the presence of migraine in patients with cryptogenic stroke should not influence decision to close PFO (Pro: Dr. R. Cubeddu, Con: Dr. M. Reissman).

After three long and informative days of *PICS*, we all deserve a break with a fun evening at the Gala Dinner, which will be held at the Museum of Science and Industry. The museum opened its doors in 1933, and is the largest science museum in the Western Hemisphere! Motor coaches will be departing from the Marriott front door at 6:30-7:00 pm on Rush Avenue for the Gala Dinner. Remember to bring your tickets!

The Device Erosion Issue: Session at PICS Focuses on Device Erosion in ASD Closure

By Karim Diab, MD

Closure of secundum atrial septal defects using the Amplatzer Septal Occluder (ASO) has become a widely acceptable alternative to surgery, and is considered a relatively very safe procedure. Although device erosion is a very rare complication with an estimated incidence of about 0.1 % in the US, it remains potentially fatal if not recognized. Today at *PICS*, there will be a special session on this topic with a panel discussion and a review of the data available to date, in advance of the expected FDA meeting that will discuss the issue next month.

In 2004, a panel of experts was selected by AGA to provide a review on the issue of device erosion in order to help identify possible risk factors, and come up with recommendations on how to minimize the risk of this serious complication (Amin Z, et al. CCI 2004). The findings of that review revealed that all erosions occurred at the dome or roof of the atria, near the aortic root. Deficient aortic rim was seen in most of the cases (89%) with a suggestion of a deficient superior rim as well. It was also noted that the device to unstretched ASD ratio was significantly larger in the patients who developed this complication. It was felt that in the presence of a deficient aortic rim and with deployment of a significantly oversized device, the edge of the device may stretch the free atrial wall adjacent to the atrial septum- especially after shrinkage of the RA cavity after ASD closure- leading to erosion. Once the device erodes the atrial roof, it can further affect the adjacent aorta. The result is the development of hemopericardium and hemodynamic compromise. It was also noted that in cases of deficient aortic rim, but adequate superior rim, a fistulous connection between the aortic root and either atrium might occur. At the time, the panel found that the risk of device erosion with ASO is very low and that this serious complication can be decreased by identifying high-risk patients, especially those with deficient aortic rim and/or superior rim. The panel recommended that the defect should not be overstretched during balloon sizing, and that the ASO device should not be oversized (not beyond 2 mm) in order to avoid straddling of the aorta. In addition, close follow-up was recommended especially for patients who develop pericardial effusion at 24hrs post-procedure.

However, the medical community remains concerned about this serious potential complication with no consensus about whether those earlier guidelines really identify the root of the problem and help avoid its occurrence. One particular issue is whether "oversizing" the device to allow straddling of the aorta could actually provide stability of the device and help prevent movement of the device against the atrial wall, and hence, decrease the risk of erosion. Some operators even felt that such oversizing of the device in certain situations where erosion had occurred despite following the 2004 guidelines, could have avoided the problem altogether (El-Said H, Moore J CCI 2009).

In addition, it is important to note that erosion has been seen in patients who did not have oversized devices placed, and that not all those who had oversized devices developed erosion. This makes it important to review cases where oversized devices were used, and compare those who developed erosion with those who did not. This could help look at the issue of oversizing and the risk of erosion.

2004 Recommendations of the AGA Expert Panel

- Follow instructions for use when performing ballon sizing.
- Avoid overstretching the ballon when balloon sizing the defect.
- Use stop-flow technique for maximum inflation.
- Be gentile with the to and fro of the device (Minnesota wiggle) while the device is attached to the delivery cable.
- Identify patients who may be at higher risk and will require closer follow-up.
  - Patients who require significantly larger ASO (> 1.5 times) then the native diameter of the ASD.
  - Patients with development of small pericardial effusion at 24-hour follow-up.
  - Patients with deformation of the ASO at the aortic root (significant splaying of the device edges by the aorta).
  - Patients with high defects (minimal aortic and superior rims).
- Mandatory 24-hour follow-up in all patients.
- Educate patients about the risk, and need for echocardiography with symptoms.

Recently, a study looked at the change in the shape of the ASO after device closure with serial TEEs up to 12 months after deployment (Kitano M, J Interven Cardiol. 2009). Although, there were no cases of erosion in that series, it was noted that the device becomes thinner, lost its flexibility, and often changed from a flare-to-closed shape on the aortic side over time, which can cause the edges of the ASO to start compressing the atrial and aortic walls. It would be interesting to look at the change of shape of the ASO in cases where an "oversized" device is placed.

Last year at *PICS*, Dr. W. Hellenbrand presented a global summary on the risk of erosion with the ASO device which had occurred in 74 total cases (rate 0.14%) worldwide. The erosions involved mainly the superior aspect of the right or left atrium with further erosion into the adjacent aorta in the majority of cases. There was an association between the development of this serious complication and a deficient anterior-superior aortic rim. There was also a trend for the erosion to occur early in pediatric patients (within 72 hrs.), and late (>3 days) in adult cases. It was also noted that there is an increased risk of erosion with the 26 mm device (used most commonly in the series) as the nitinol wire thickness changes making it stiffer compared to the 24 mm device. Interestingly, there was no trend noted between erosion and oversizing.

At this point, it is essential for the medical community to be aware of this possible serious complication after ASD closure using the ASO. It is also important to be able to recognize the risk factors for such a potentially fatal complication, and to reach a consensus on how to avoid it in order to make this procedure as safe as possible. Stay tuned to see what the panel at *PICS* has to say and recommend!