Letters to the Editor

doi:10.1093/ejechocard/jen119

Online publish-ahead-of-print 15 March 2008

Multidisciplinary approach in a case of successful surgical treatment of a voluminous intracardiac fungal mass in an infant

We have read with great interest the article by Correale et al. on a case of voluminous mycetoma in a newborn with Down Syndrome. The interest, in that case, was more than academic because of the brilliant and positive collaboration we had set up, at that time, offering cardiac surgical treatment to the patient referred by the colleagues at the Hospital OO.RR of Foggia. After a complete echocardiographic examination revealing a mass within the right atrium of an infant (6-month-old female) with a history of corrective surgery for duodenal stenosis and presenting, at the Neonatology Unit of the Hospital OO.RR of Foggia, with signs of severe congestive heart failure, a tele-echocardiographic counselling was promptly requested. This opportunity existed thanks to the Italian Ministry of Health research funds, which permitted similar audio-video ISDN-based devices to be installed in the main paediatric institutions in the Province of Puglia and linked in a wide regional network. Tele-echocardiography was performed at the remote site in Foggia and transmitted, in real time, to the Department of Pediatric Cardiac Surgery in Bari (Figure 1A). Owing to the adequate imaging resolution, the cardiologists and the surgeons, at the Department of Pediatric Cardiac Surgery in Bari, after judging the imaging and the echocardiographic projections highly reliable, performed a broad commenced counselling between a team of local and remote neonatologists, cardiologists, and paediatric cardiac surgeons and the parents of the child at the remote site, expressing the indication to surgery as well as the correct timing. The child was rapidly transferred to the Department of Pediatric Cardiac Surgery in Bari and was referred for surgery the next day. The trans-thoracic echocardiography, performed upon arrival in Bari, revealed the same images as that transmitted several hours earlier (Figure 1B). The indication to surgery, in this case, was due to the dimensions of the mass, which had grown despite anti-mycotic medical treatment involving the entire atrio-ventricular orifice and the fungal origin of the mass, which was judged to be extremely friable and, thus, with higher probability with respect to the bacterial endocarditis, to embolize. The operation was performed on cardio-pulmonary by-pass (CPBP) in hypothermic circulatory arrest with single right atrial cannulation. Despite feasibility to perform the procedure without CPBP, as reported elsewhere, we preferred to electively propose circulatory arrest, on CPBP, for two main reasons:

- in order to perform a technique implying less manipulation of right heart sections
- in order to perform a more delicate and finer dissection of the huge mass (Figure 2) from the tricuspid valve apparatus with the chance of tricuspidal plasty, due to the lack of a reliable prosthesis in the tricuspid position in small infants.

The surgical ablation with cautious chordal and leaflet preservation and long-term anti-infectious therapy were perfectly successful. The discharge echocardiography revealed a free passage of flow through the tricuspid valve and moderate tricuspid regurgitation.

Comment

In small neonates and premature babies, an indwelling venous central catheter is often mandatory for survival. We highlight the concept, in full agreement with Correale et al., that in all patients who have undergone parenteral nutrition for a long time, frequent echocardiographic controls are mandatory. In our opinion, a cardiologist is not necessary for the detection of an intracardiac catheter (possibly on a daily basis in high-risk newborns); in fact we think that, according to the literature discussing on the current role of the paediatric cardiologists, in a l-level echocardiographic procedure, competence, and practice need more than ‘hats’. This proposal is confirmed by the common practice in many Neonatologic Units, where, due to the chronic lack of available paediatric cardiologists, neonatologists with experience in ultra-sound have been able to fill the gap for the purposes above reported.

At the time of the first publication of this case, as an abstract, tele-transmission of echocardiographic images, by means of available ISDN equipment of only 384 kbit/s, was an innovative procedure and of immense cardiologic interest. Today, the widespread availability of ADSL broad-band PC-based systems allows the transmission of data in a more reliable and less complex way and, moreover, at a very low-cost. According to our past experience, the positive impact of telemedicine on health assistance has been confirmed by the possibility to optimize the organization of transfer of the patients,

Figure 1 (A) Tele-echocardiograms transmitted by the colleagues in Foggia, showing the mass in a four-chamber view; at lower right corner (inset) shows staff in the Department of Pediatric Cardiac Surgery in Bari analysing the images. (B) Same projection of the child, once transferred to the Pediatric Cardiac Surgery in Bari (adapted from Correale et al.).

Published on behalf of the European Society of Cardiology. All rights reserved. © The Author 2008.

For permissions please email: journals.permissions@oxfordjournals.org.
always at risk in highly critical neonates, the better management of surgical activity, and the delicate phase of counselling. In our opinion, even in industrialized countries, such technology might play an important role.

Surgical ablation of the mass associated with anti-infectious medical treatment is a winning strategy. As reported in the literature, in fact, when direct visualization of the infected tricuspid valve did not reveal complete destruction of the tissues by the infection, excision of the valve has the full dignity of a radical procedure.7

At 7.5 year follow-up, the patient treated is alive and well; the last echocardiographic examination revealed that tricuspid valve incompetence remains moderate, allowing the patient to lead a normal life without medical treatment.

Acknowledgements

The authors are grateful, for their active collaboration, in the clinical development of the telemedicine project, to the doctors, nurses, and secretarial staff of the Department of Pediatric Cardiac Surgery in Bari; Dr Mariella Chirico, Project Coordinator in Bari, and all the co-workers of the Neonatology Units of Acquaviva delle Fonti (Bari), Brindisi, Foggia, Lecce, and Taranto, involved in this project.

References


Dario Ernesto Troise
Pediatric Cardiac Surgery Department
‘Policlinico-Giovanni XXIII’ Hospital
University of Bari
Piazza Giulio Cesare 11
Bari 70100
Italy

Nicola Laforgia
Department of Obstetric Gynecology and Neonatology
University of Bari
Piazza Giulio Cesare 11
Bari 70100
Italy

Maria Rosaria Tagliente
Pediatric Cardiac Surgery Department
‘Policlinico-Giovanni XXIII’ Hospital
University of Bari
Piazza Giulio Cesare 11
Bari 70100
Italy

Teodoro Pirolo
Pediatric Cardiac Surgery Department
‘Policlinico-Giovanni XXIII’ Hospital
University of Bari
Piazza Giulio Cesare 11
Bari 70100
Italy

Paolo Arciprete
Pediatric Cardiac Surgery Department
‘Policlinico-Giovanni XXIII’ Hospital
University of Bari
Piazza Giulio Cesare 11
Bari 70100
Italy

Luigi de Luca Tupputi Schinosa
Pediatric Cardiac Surgery Department
‘Policlinico-Giovanni XXIII’ Hospital
University of Bari
Piazza Giulio Cesare 11
Bari 70100
Italy