

Case: Neonate with Severe Aortic Stenosis, Dysplastic AV, LV Mild Dysfunction

- Intervention -

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The main treatment goal of congenital aortic valve stenosis is to preserve the native aortic valve and left ventricular function for as long as possible before additional aortic valve repair or replacement is necessary and even not to do additional invasive treatment if possible. Since the first report of successful balloon dilation of the aortic valve in an 8-year-old child with congenital aortic valve stenosis in 1983, balloon aortic valvuloplasty has been performed widely in most centers with well experienced interventional cardiologist.

With the improvement in imaging in the catheterization laboratory, smaller French sheath and catheters, and higher pressure balloons, percutaneous balloon valvuloplasty has become an acceptable alternative to open heart surgery for severe congenital aortic valve stenosis and can be safely performed with virtually no mortality and with minimal morbidity nowadays. From the experience of the Boston Children's Hospital over time, the mortality of balloon valvuloplasty had decreased from 22% (1985 to 1993) to 4% (1994 to 2002) and more decreased nowadays.

The possibility of successful balloon valvuloplasty or surgical valvotomy depends on precise preoperative evaluation of valve morphology and meticulous discussion between cardiologist and surgeon what treatment option will be best for individual patient with severe aortic valve stenosis at that moment. Important concept we have to remember for aortic stenosis treatment is that both balloon valvuloplasty and surgical valvotomy are only a palliative procedure and many patients will be still at the risk of additional re-treatment as they grow older.

For neonate with severe aortic stenosis with dysplastic aortic valve and mild left ventricular dysfunction, we should consider the degree of dysplastic valve morphology, general hemodynamic condition before invasive treatment, surgical backup including emergent ECMO support in case of balloon valvuloplasty and mostly the experience of individual cardiologist and cardiac surgeon.