

DIFFICULTIES TO ENTER INTO THE LEFT VENTRICLE DURING PERCUTANEOUS TRANSVENOUS MITRAL COMMISSUROTOMY (PTMC) - OUR EXPERIENCES WITH 50 CHALLENGING CASES

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BACKGROUND

Percutaneous transvenous mitral commissurotomy (PTMC) is the standard of treatment for symptomatic severe rheumatic mitral stenosis with long term follow up data equivalent to mitral valve replacement. Though the incidence of rheumatic fever is decreasing with the improvement of socioeconomic status of our country, still we are getting many cases of rheumatic valvular heart disease, among which mitral stenosis is the commonest. As a national institute of cardiovascular disease, our center holds the record of the highest number of PTMC in the country (more than 300 cases per year). PTMC has the standard Inoue technique but we have to modify the procedure in many technically challenging cases among which crossing the mitral valve with balloon is the most common challenge.

METHODOLOGY

We studied a total 50 cases of PTMC where we had to modify the standard procedure to enter into LV. We used two over the wire strategies to enter the LV. The first one needs only the exchange of J shaped wire from the balloon and introduce the spring wire into the balloon and keeping the tip of the wire protruding through the tip of the balloon into the orifice of the mitral valve and push the wire during diastole into the LV. The second strategy needs removal of balloon keeping the spring wire into the LA and the Mullin sheath was introduced over the wire and the tip of the wire was directed towards the MV orifice and pushed during the diastole and the sheath was removed quickly and the balloon was introduced over the wire into LV.

RESULTS

We succeeded in all cases (100%) to enter into the LV. The first and second strategy were done in 20 and 30 cases, respectively. The first technique was applied to every patient and was successful in 40% of cases. Mean procedural time was 35±15 min and fluoroscopic time was 12±8 min which is higher than our daily practice. Strategy one required less time in comparison to the second one (procedural time 28±8 min vs 42±12 min and fluoroscopic time 10 ±2 min vs 14±3 min). Analyzing the causes of difficulties, critical mitral stenosis was the highest (18 cases, 36%) followed by low septal puncture (16 cases, 30%), critical MS and low septal puncture (10 cases, 20%), septal aneurysm (4 cases, 8%) and thickened interatrial septum preventing free movement of balloon (2 cases, 4%). Our procedures were free of any major complication. Ventricular ectopic developed in 100% of cases and non-sustained ventricular tachycardia developed in 92% cases and all were well tolerated needed no intervention.

CONCLUSION

Over the wire entry into LV was advised by many authors and Monjunath et al. published a report of 32 cases. Their technique is similar to our second strategy. But before taking the second one we tried with the first one which is very simple and has less fluoroscopic time and procedural time. Both strategies are cost effective requiring no other new equipment and are safe and can be used in difficult cases.