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Double loop technique for Percutaneous Transvenous Mitral Commissurotomy



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ABSTRACT

Percutaneous Transvenous Mitral Commissurotomy (PTMC) is a standard treatment for critical mitral stenosis. In certain situations such as large left atrium (LA) or low trans-septal puncture, there is technical difficulty in crossing a PTMC balloon across the mitral valve, leading to high failure rate. I hereby describe a case of PTMC successfully performed by using double loop technique to cross the mitral valve.

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Percutaneous Transvenous Mitral Commissurotomy (PTMC) is a standard treatment for critical mitral stenosis. In certain situations such as large left atrium (LA) or low trans-septal puncture, there is technical difficulty in crossing a PTMC balloon across the mitral valve, leading to high failure rate. I hereby describe a case of PTMC successfully performed by using double loop technique to cross the mitral valve.

Following a standard trans-septal puncture and dilation with 12 F dilator, an Inoue balloon was placed in LA. With the help of J-shaped stylet and anti-clockwise rotation, a double loop of Inoue balloon was made in LA (Fig. 1). An extra length of balloon was pushed in LA to make a double loop. As the balloon reaches near mitral valve, the stylet is withdrawn 1–2 cm within the balloon, and the balloon is pushed to cross the mitral valve. Following left ventricle (LV) entry (Fig. 2), the distal half of balloon is inflated and then whole of the balloon assembly is pulled back till it got stuck up at mitral valve

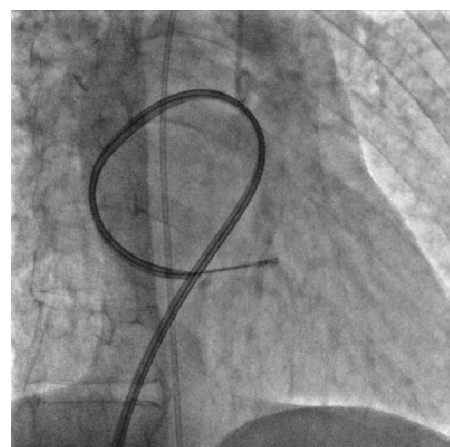


Fig. 1 – A double loop PTMC balloon in left atrium, in RAO 30° projection.

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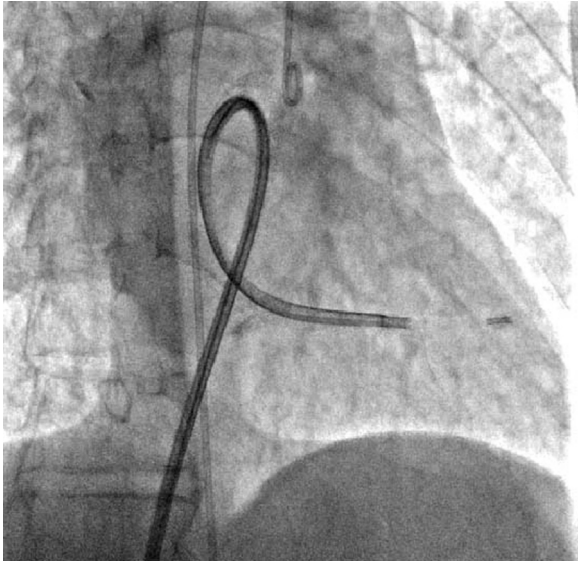


Fig. 2 – PTMC balloon in left ventricle following crossing of mitral valve by double loop technique.

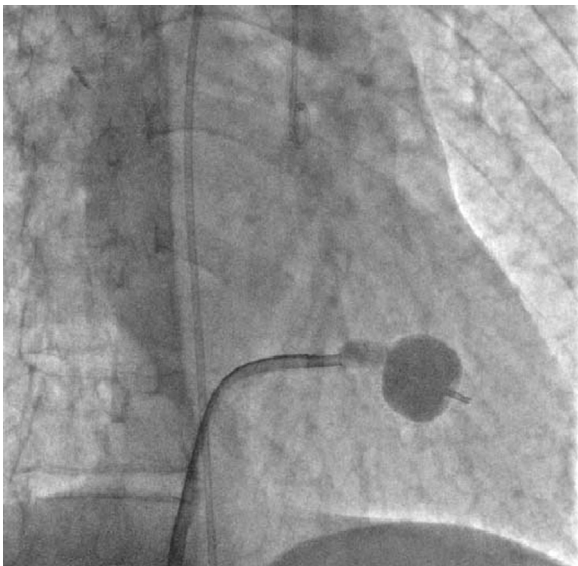


Fig. 3 – Half inflated PTMC balloon across the mitral valve following straitening of double loop.

(Fig. 3). Following this, the remaining half of the balloon is inflated for successful PTMC (Video 1).

The conventional direct method of Inoue balloon entry across the mitral valve is difficult, time consuming, and is having high failure rate in patients with giant LA (Fig. 4) or those with septal puncture inappropriately low and anterior to

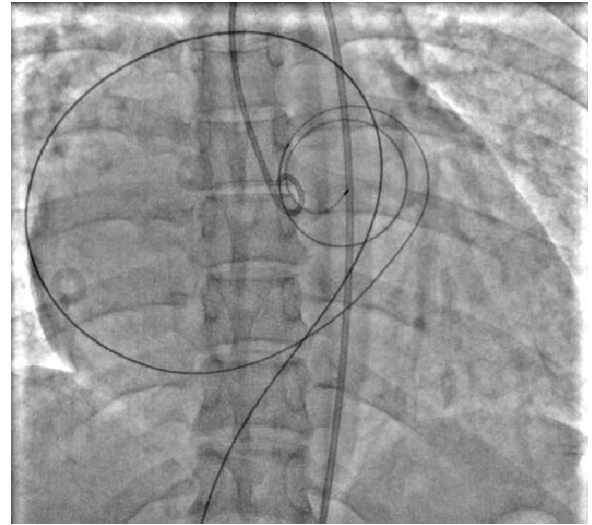


Fig. 4 – A giant left atrium, outlined by the loop of Inoue wire.

fossa ovalis. In such situations, double loop technique is very successful in crossing the mitral valve.^{1,2} I have personal experience of performing 112 successful PTMC using this technique, out of total 500 PTMC performed during last 7 years from July 2008 till June 2015.

Conflicts of interest

The author has none to declare.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.ihj.2015.09.035](https://doi.org/10.1016/j.ihj.2015.09.035).

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