

Balloon Atrial Septostomy in Neonates: Moving from Catheterization Laboratory to Bedside

Even with dedicated neonatal intensive care facilities, most of the Indian tertiary care centers lack specialized cardiac care facilities and surgical back-up. Many neonates with duct-dependent circulation, despite being on prostaglandin infusion, require adequate mixing at the atrial level for adequate oxygenation. Many such neonates are not stable enough to be transported. Urgent balloon atrial septostomy at the referring center is the only bail-out option in many of these neonates.

With many neonatal units being equipped with in-house echocardiography facility, with basic training of point-of-care echocardiography and easily accessible hardware (which can be sterilized and reused in resource-limited settings), this procedure can be done bedside by a cardiologist adequately trained in the procedure. The need of the procedure should be decided by neonatologist in consultation with cardiologist.

Here in we describe the steps, hardware needed and special precautions to be taken for this procedure. After obtaining consent, venous access is obtained *via* femoral or umbilical route, and a 4F/5F pediatric sheath is exchanged over the guide wire. Fogarty's catheter (*Fig. 1*) is passed under echocardiography guidance from

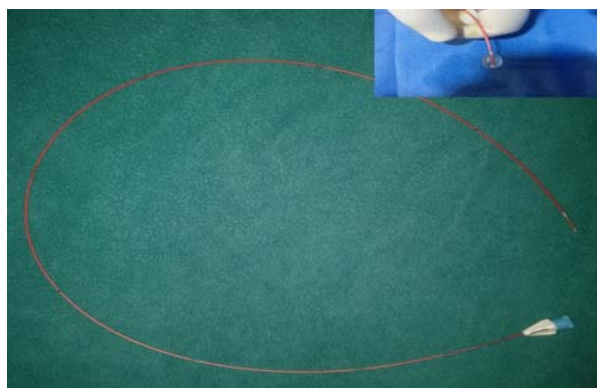


FIG. 1 Fogarty's (4F) arterial embolectomy catheter, its tip has a balloon which has to be inflated during the procedure.

inferior vena cava (IVC) to right atrium and probed in to patent foramen ovale (PFO), and is guided in to left atrium. Once in to left atrium, the balloon is inflated with saline and position confirmed on echocardiogram. With a rapid controlled jerk of balloon, membranous inferior margin of the foramen ovale is torn allowing good flow across PFO (*Web Video 1*). Controlled jerk is necessary to avoid any injury to IVC. We emphasize that proper training under expert guidance/supervision is required before one attempts this procedure.

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