

**Initial Experience with the Nit-Occlud ASD-R: Short-Term Results with Emphasis on Causes of Device-Related Cardiac Rupture**

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**Objective:** The Nit-Occlud® ASD-R (NOASD-R) is a new device with unique characteristics in terms of the device structure and delivery system. The device comprises two equal-sized circular discs linked by a short waist corresponding to the diameter of the defect. Reported data on the NOASD-R are limited. We evaluated patients who underwent cardiac catheterization with the aim of the device closure of ASD using NOASD-R to assess the safety and efficacy of the device.

**Methods:** Between 2014 and 2015, transcatheter closure of ASD using the NOASD-R was performed in 30 patients. If standard left upper pulmonary vein (LUPV) deployment technique was unsuccessful as the device not aligned perpendicularly to the septum, right upper pulmonary vein (RUPV) approach was used.

**Results:** The mean age was  $10.9 \pm 12.8$  (3.5–60, median 6) years and mean weight was  $28.2 \pm 18$  (14–79) kg. 2-D diameter of the defect was  $13.7 \pm 3.1$  (10–22.0) mm and colour flow diameter was  $16 \pm 3.6$  (11.2–26.3) mm. The nature of the defect was complex in seven patients as multiple defects in two, floppy-mobile posterior-inferior rim in two, and deficient posterior-inferior rim in three (<5 mm).

Implantation was successful in all patients. The standard LUPV approach was used in 25 whereas RUPV approach was required in 5. The mean size of devices was  $17.1 \pm 3.3$  mm (12.0–26.0 mm). The mean device size/2D defect diameter ratio was  $1.26 \pm 0.09$  (1.12–1.40). The mean device size/color flow diameter ratio was  $1.07 \pm 0.06$  (1.0–1.22). Releasing problem was encountered in three. Device-related erosion on the day after the closure was observed in one. No embolization, late erosion or dislodgement of the device was encountered during or after implantation. Complete occlusion has occurred in all at a median 10 month follow up.

**Conclusion:** NOASD-R is a feasible and effective device for transcatheter occlusion of moderate to large secundum ASDs in selected patients. The occurrence of the erosion on the right atrial roof may be due to the high localization of the defect, and the larger size of the right disc.