

PERIMEMBRANOUS LARGE VSD CLOSED BY VENTRICULAR SEPTAL ANEURYSM: “NATURE ALSO HEALS THE DEFECT IT CREATES”

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ABSTRACT

Large ventricular septal defect if untreated in infancy leads to irreversible pulmonary hypertension, congestive heart failure. We report a rare case of 3 year old child with 12 mm large perimembranous VSD closed by the ventricular septal aneurysm; some times the nature also heals the defect it created.

Keywords: *Ventricular Septal Aneurysm*

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INTRODUCTION

Natural history of large perimembranous ventricular septal defect (VSD) is that it does not close with the passage of time and mandates early surgery. Small VSD closes with the septal leaflet of tricuspid valve, membranous aneurysm of septum or prolapse of the right coronary cusp.

CASE

A 2 year old child with large perimembranous VSD who was lost to follow up presented to the out patient department with history of recurrent respiratory tract infection. The child was advised to undergo surgical VSD closure at 6 months of age but he was not able to undergo surgery due to financial constraints. Mother revealed the history of decreased frequency of respiratory tract infection during 2nd year of life. Echocardiography revealed large perimembranous VSD closing by the ventricular septal aneurysm with restrictive flow pattern. Child was advised for follow up after 6 months with advice of no requirement of surgical VSD closure.



Figure 1: Large perimembranous VSD Closed by septal aneurysm

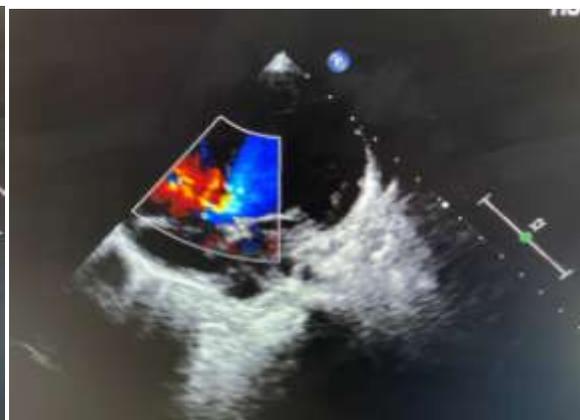


Figure 2: Colour Doppler showing restrictive flow pattern

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DISCUSSION

Majority (up to 80%) of small VSD close by 10 years of age, muscular VSD closes more than the perimembranous VSD. Perimembranous ventricular septal defect closes with the septal leaflet of the tricuspid valve, ventricular septal aneurysm and prolapsing right coronary cusp where as small muscular VSD closes with the muscular overgrowth of the septum. Large VSD, outlet and inlet VSD never closes which mandates surgical closure. Although spontaneous VSD closure can occur at any age—gestation, infancy, childhood, adolescence, and adulthood (Rao *et al.*, 1977); it occurs most commonly during the first 6 months of life (Hiraishi *et al.*, 1992), during the first year (Erol *et al.*, 2014; Meberg *et al.*, 2000), or soon after the first year of life (Krovetz *et al.*, 1998). Afterward, the occurrence of closure declines progressively and occurs less commonly after the age of 10. It has been documented that the incidence of the closure increases with age, from 24% at 18 months of age to 50% at 48 months and 75% at 120 months (Alpert *et al.*, 1979). However, in older children, at 3.5 years old, the incidence declines sharply to 44% and then rises to 66% at 7 years and 75% at 10.5 years. A similar trend has been found in other reports, which showed 57% of cases closed before 3 years of age (Collin *et al.*, 1969), 89% closed before 8 years of age, and 4% to 10% closed after the age of 17 (Neumayer *et al.*, 1998). We report a rare case of large perimembranous VSD in a 3 year old child closed by ventricular septal aneurysm remembering the fact that “nature also heals the defect it creates”.

REFERENCES

- Alpert BS, Cook DH, Varghese PJ et al. (1979).** Spontaneous closure of small ventricular septal defects: ten-year follow-up. *Pediatrics*, **63**(2) 204–206.
- Collins G, Disenhouse R, Keith JD (1969).** Spontaneous closure of ventricular septal defect. *Canadian Medical Association Journal*, **100**(16) 737–743.
- Erol O, Sevket O, Keskin S et al. (2014).** Natural history of prenatal isolated muscular ventricular septal defects. *Journal of Turkish German Gynecology Association*, **15**(2) 96–99.
- Hiraishi S, Agata Y, Nowatari M et al. (1992).** Incidence and natural course of trabecular ventricular septal defect: two-dimensional echocardiography and color Doppler flow imaging study. *Journal of Pediatrics*, **120**(3) 409–415.
- Krovetz LJ (1998).** Spontaneous closure of ventricular septal defect. *American Journal of Cardiology*, **81**(1) 100–101.
- Meberg A, Otterstad JE, Froland G et al. (2000).** Outcome of congenital heart defects—a population-based study. *Acta Paediatrica*, **89**(11) 1344–1351.
- Neumayer U, Stone S, Somerville J (1998).** Small ventricular septal defects in adults. *European Heart Journal*, **19**(10) 1573–1582.
- Rao PS (1977).** Natural history of the ventricular septal defect in tricuspid atresia and its surgical implications. *British Heart Journal*, **39**(3) 276–288.