

Multiple ventricular septal defects: A new strategy

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Objective: Multicenter prospective study to evaluate a new strategy for infants with multiple Ventricular Septal Defects (VSDs).

METHODS: From 2004 to March 2011 15 consecutive infants, mean age 3.6 months (9 days-9 months), mean weight 4.2kg (3.1-6.1kg), with multiple VSDs underwent Pulmonary Artery Banding (PAB) with adjustable FloWatch-PAB®. Associated cardiac anomalies: patent ductus arteriosus (9), aortic coarctation (2), hypoplastic aortic arch (1) and left isomerism (1). Mean duration of pre-operative mechanical ventilation: 22 days (0-240 days)

Results: There were no early or late deaths during a mean follow-up of 45 months (12-89 months).

FloWatch-PAB® adjustments were required in all patients, a mean of 4.7 times/patient (1-9) to tighten the PAB, and a mean of 0.8 times/patient (0-3) to release the PAB with the patients growth.

After a mean interval of 32 months (8-63 months) 5/15 patients underwent reoperation: 3/5 PAB removal and closure of a remaining peri-membranous VSD and 2/5 only PAB removal. All muscular multiple VSDs had closed in all 5 patients. PA reconstruction was never required.

In 6/10 of the remaining patients all muscular VSDs had already closed.

Conclusions: This reproducible new strategy with adjustable PAB simplifies the management of infants with multiple VSDs providing the following advantages: a) good results (0% mortality); b) delayed surgery with high incidence (11/15=73%) of spontaneous closure of multiple muscular VSDs; c) facilitated closure of residual peri-membranous VSD at older age and larger body weight; d) PAB application and late removal remains the only procedure required for Swiss cheese multiple VSDs without associated peri-membranous unrestrictive VSD.

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