ATRIAL SEPTAL STENT IMPLANTATION FOR THE MANAGEMENT OF CONGENITAL HEART DISEASE IN INFANTS

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INTRODUCTION

The creation of an unrestrictive atrial septal defect could be crucial for the management of complex congenital heart defects in different situations including relieve of atrial hypertension maintenance of cardiac output or adequate atrial mixing to improve systemic oxygen saturation. The aim of this study is to report an institutional experience performing percutaneous atrial septal stenting to relief atrial restrictions in various scenarios.

OBJECTIVE

We retrospectively reviewed all pediatric cardiac catheterization procedures that included transcatheter atrial septal stent implantation (or an attempt), that were performed between 2005 and 2015.

RESULTS

Thirty-seven patients underwent 40 transcatheter interventions. Thirty-nine implantations attempts (97,5%) were successful. The median weight was 4 kg [2-80 kg] and median age was 3.5 months (range 0-193 months). Approximately 40% of patients had an intact atrial septum (IAS), and radiofrequency perforation of the interatrial septum was used before septal stent implantation. Left or right venous femoral access was used in all patients. Indications were categorized in: relief left atrial hypertension (45%), hypoplastic left heart syndrome (N=14) or left heart obstructive defects (N=4), maintenance of cardiac output in the setting of severe pulmonary hypertension or right ventricle dysfunction (35%), and unloading left cavities in the context of severe left ventricular dysfunction and ECMO assistance (20%). Major adverse events were seen in 12% of procedures: 3 stent migrations and 2 cardiac tamponades (one periprocedural death). Approximately 20% of patients required stent overdilation. All stented atrial septum remained widely patent until elective surgical stent explant (54%), or until last follow-up (median follow-up time 32 months).

CONCLUSION

A restrictive atrial septal defect or IAS, can be a challenging problem in different situations of the management of cardiac diseases in infants. Atrial septal stent implantation could be a feasible and effective technique in selected situations.