

## Percutaneous closure of patent ductus arteriosus - Two decades of experience

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### Introduction :

Patent ductus arteriosus (PDA) corresponds to 5-10% of all congenital heart disease and is a risk factor for congestive heart failure, endocarditis and pulmonary hypertension. The percutaneous approach is now considered the method of choice for PDA closure.

### Objective:

Analyze the overall experience in PDA percutaneous closure for the last 23 years in a reference center of pediatric cardiology.

### Methods:

Retrospective analysis of intervention related covariates of patients undergoing cardiac catheterization with the intention of PDA percutaneous closure from June 1990 to May 2013. First and last five years were also compared.

### Results:

623 patients underwent cardiac catheterization with PDA closure intention. Median age was 2 years, 62.1% female. Median weight was 13.3 kg. In 596 patients devices were used, 94% underwent a single intervention and in 87.6 % was deployed a single device. In 4.3% of patients devices were not implanted, mostly because a non favorable anatomy. 6.4% of patients were catheterized in the first 5 years and 38.2 % in the last 5 years. In the first 5 years the devices used in 89.7% of patients were Rashkind Umbrella® and in the last 5 years in 78.2% were used Coils®. Overall complication rate was 1.9% mostly due to embolization, with successful retrieval during the same procedure, except in one case. Mortality was null and there was no adverse events in the last 5 years. Fluoroscopy time was reduced (median of 17.5 minutes to 5.6 minutes) as well as the procedure duration (median 115min to 40 min), both with statistical significance ( $p < 0.01$ ). Residual shunt at 24h after procedure was reduced ( 46.2% to 10.2%,  $p < 0.01$ ) as well as at 6 months after procedure (35.9% to 0.4 %,  $p = 0.1$ ).

### Conclusions :

Over the past 23 years there has been an overall improvement in the efficacy and safety of PDA percutaneous closure, with perfected technical skills and new devices available. The efficacy and low complication rate found in this study confirms that this should be the method of choice in the treatment of PDA.