Immediate results of PDA stenting in duct dependant pulmonary circulation. Egyptian experience

Pediatric Cardiology Unit- Department of Pediatrics-Cairo University-Egypt.

Introduction

BT shunt used to be the first line for palliative treatment in duct dependant pulmonary circulation lesions. However, this procedure has a lot of complications and long waiting list. The aim of our study was to assess the efficacy, safety and immediate outcome of ductal stenting in neonates & young infants with duct-dependent pulmonary circulation.

Methods:

All patients with duct dependant pulmonary circulation who were unable to undergo a shunt operation and were referred to Cairo University Pediatric Cardiology Division, during the period from April 2008 to February 2011 were included in the study. Patients with bleeding tendency, sepsis, Hyaline Membrane Disease and pneumonia were excluded.

Results:

Ductal stenting was attempted for 56 patients with duct dependant pulmonary circulation. 46 (82.1%) patients had univentricular physiology and 10 (17.9%) patients had biventricular physiology. The mean age was 33.7 days (5-210 days), and the mean weight was 3.6 ± 0.76 Kg.

The stent diameter ranged from 3-4 mm, stent length ranged from 12 - 28mm (19 ± 3.2). 55/56 cases were done through a femoral access and one case through an axillary axis, fluoroscopy time was 24.7 ± 18 min, total procedure time was 88.5 ± 36.5 min.

The success rate was 64% (36/56), 23/26 were in horizontal straight ducts, 3/5 in vertical straight ducts, 1/2 in horizontal tortuous ducts and 9/25 in vertical tortuous ducts.

Oxygen saturation improved post stenting from 65 ± 5.79% to 85.2 ± 19.9%. Mean post stent hospital stay was 10.6 ± 4.5 days.

There were 3 mortalities in the 36 stented cases (8.3%), femoral artery occlusion occurred in 6/36 cases (16.6%), stent displacement in 2/36 cases (5.5%), acute stent thrombosis in 2/36 cases (5.5%), septicemia occurred in one case (2.7%) with no evidence of pulmonary overshunting in any of our cases.

Conclusion:

PDA stenting is a life saving procedure, that should be attempted even in tortuous ducts. Proper preparation of the patient, anaesthetic management and post-stenting ICU management are mandatory for success. Surgical intervention should be done early after successful stenting to guarantee good surgical outcome before desaturation.