

Chylothorax after surgery for congenital heart disease - incidence, risk factors and treatment

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Introduction

Chylotorax is a known and severe complication after congenital heart surgery. The incidence of chylothorax ranges from 0,5 to 9% and it is associated with respiratory, nutritional, immunologic, hematologic and metabolic morbidity.

Methods

We present a retrospective analysis of data from our centre from 1/1/2012 to 30/10/2015. We report the incidence of chylothorax after congenital heart surgery, risk factors associated with its occurrence and the therapeutic approach at our centre.

Results

During this period 596 surgeries in 513 patients with congenital heart disease were performed. The incidence of chylothorax was 3%(16 patients). Chylothorax occurred after arterial switch(6 patients), total cavopulmonary connection(3), correction of tetralogy of Fallot(3), correction of aortic coarctation, creation of interatrial communication, mediastinal debridement and cardiac transplantation(1).

The occurrence of chylothorax was associated($p<0,05$) with younger age at surgery($1,6\pm 2,8$ vs $8,2\pm 15,3$ years, mean \pm standard deviation), longer extracorporeal circulation (148 ± 46 vs 86 ± 5 minutes), longer aortic clamping(84 ± 48 vs 52 ± 38 minutes), delayed sternal closer(RR 24,9; IC95% 10,7-69,2) and prolonged stay in the intensive care unit(53 ± 40 vs 15 ± 22 days).

Diagnosis of chylothorax was also associated with the occurrence of: arrhythmias requiring treatment($p=0,009$), seizures ($p<0,01$), cerebral vascular accident($p<0,01$), diaphragmatic paralysis($p<0,01$), acute renal injury requiring dialysis($p<0,01$) and infectious complications($p<0,01$). One patient died without resolution of chylothorax. There was no statistical association between chylothorax and mortality in our study.

Diagnosis of chylothorax was made at a mean of 8 days after surgery(range 4 to 15 days). All patients were treated with hypolipid diet, the only treatment required in two thirds of patients and resolution was in mean after 12 days(4-29 days). Treatment with octreotid was required in 7 patients and was effective in 4(57%). This treatment was initiated in mean at the 5th day after diagnosis (0-18 days) and mean treatment duration was 10 days(2-17 days). In two patients(12,5%) surgery was required (ligation of thoracic duct and pleurodesis).

Conclusions

Chylothorax was a rare complication. It was associated with younger age, complex surgical procedures, higher morbidity and longer stay in the intensive care unit. Chylothorax was not associated with increased mortality. Most cases were treated with hypolipid diet or hypolipid diet and octreotid. A minority of patients required surgery.