



Service Priorities and Programmes
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Prediction of pericardial effusion after paediatric open heart surgery

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Introduction

Pericardial effusion (PE) is a common complication after paediatric open heart surgery. It may contribute to post-operative morbidity and mortality. This study tried to explore the relationship between the selected variables and the occurrence of pericardial effusion.

Objectives

1. Describe the samples undergoing heart surgery in one tertiary paediatric heart centre
2. Explore the relationship between the independent variables such as sex, age, types of surgeries, duration of cardio-pulmonary bypass (CPB) and the aortic cross clamp time and the dependent variable the occurrence of PE

Methodology

1. An exploratory descriptive design was used with the recruitment of 97 patients. They were diagnosed with congenital heart disease, aged between birth and 18 years, and they had open heart surgery done from July to December 2013.
2. Five variables were analysed as possible predictors of post-operative PE including sex, age, types of surgeries, duration of CPB and aortic cross clamp time.
3. Descriptive statistics was computed for all variables. Logistic regression model was computed to determine the predictive values of occurrence of PE.

Result

1. There were 48 male and 49 female patients aged from day 12 of life to 17 years (median 14 months).
2. The median of CPB and aortic cross clamp time was 87 minutes and 48 minutes respectively.
3. The four most commonly performed surgeries were Atrial Septal Defect repair (19.6%), Ventricular Septal Defect repair (19.6%), Tetralogy of Fallot repair (17.5%) and Right Ventricular Outflow Tract (RVOT) procedure (12.4%)
4. 16.5% samples developed PE and their symptoms were non-specific. The time of echocardiographic evidence of PE was post-operative day 10 (median). Among them 4 needed surgical drainage to resolve the PE.
5. 5 patients were discharged within the first week after operation and required re-admissions for management of PE.
5. There were no significant differences between sex, age, types

of surgeries, duration of CPB and aortic cross clamp time, and the occurrence of PE. 6. Although the numbers were few, PE occurred more often in patients who had RVOT procedure performed, 5 out of 12 (41.6%). Conclusion PE may be developed with non-specific symptoms, even late onset till weeks after operation despite no significant differences noted in this study. There is a need to extend the study in the exploration of strategies in early detection of PE. Moreover, the nurse should stress the importance of post-operative follow-up particularly those children born to Mainland parents who require visa entry to Hong Kong.