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Chylothorax following cardiac reoperation for tricuspid and pulmonary residual insufficiency: a case report

Redha Lakehal*, Soumaya Bendjaballah, Baya aziza, Abdelrahman Babouri and Abdelmalek Bouzid

Department of Heart Surgery, Ehs Dr Djaghri Mokhtar, Constantine, Algeria

***Corresponding Author:** Redha Lakehal, Department of Heart Surgery, Ehs Dr Djaghri Mokhtar, Constantine, Algeria; Email: lakehal.redha@gmail.com

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Abstract

Introduction: Chylothorax is an unusual cause of pleural effusion. Several mechanisms can contribute to the development of chylothorax after cardiac surgery. Although conservative management with dietary adjustments is effective in some patients, surgical treatment is usually definitive. The aim of this work is to report a case of chylothorax following cardiac reoperation for double tricuspid and residual pulmonary insufficiency in a patient operated on for T4F.

Methods: We report the observation of a 19-year-old man operated on in 2002 for T4F with dual tricuspid and residual pulmonary insufficiency. He underwent a second open-heart operation where he benefited from a double tricuspid and pulmonary valve replacement by bioprotheses under CPB.

Results: The postoperative consequences were marked by the appearance of chylothorax in a first day postoperative at constant flow: 300 cc / day of milky white liquid, which persisted for 02 weeks. Our management was parenteral nutrition with thoracic drainage on 16th day.

Conclusion: Very exceptional postoperative complication but it can be fatal.

Keywords: Chylothorax; Trauma; Lymphatic Channels; Parenteral Nutrition; Drainage

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Introduction

Chylothorax is an unusual cause of pleural effusion. There is little information regarding the actual incidence and risk factors for chylothorax after pediatric heart surgery [1-3]. Several mechanisms may contribute to the development of chylothorax after heart surgery [4]. Although conservative management with dietary adjustments is effective in some

patients, surgical treatment is usually definitive [8-12]. The aim of this work is to report a case of chylothorax in the immediate postoperative cardiac reoperation for double tricuspid and symptomatic residual pulmonary insufficiency in a patient operated for Tetralogy of Fallot (T4F).

Observation

We report the observation of a 19-year-old man operated in 2002 for T4F who presented with residual and symptomatic dual tricuspid and pulmonary insufficiency. He underwent a second open-heart operation where he benefited from a double tricuspid and pulmonary valve replacement by bioprostheses under cardiopulmonary bypass (CPB). He was in class I of the NYHA functional class. The chest X-ray showed a cardiothoracic index: 0.58. The ECG showed regular sinus rhythm. Echocardiography showed an EF of 54.45%; tricuspid insufficiency grade IV; pulmonary insufficiency grade IV; SAPP: 50 mm Hg with dilated of right heart chamber. For the gesture, the patient underwent a second open-heart operation where he benefited from a double tricuspid and pulmonary valve replacement by bioprostheses under CPB after dissection of the cardiac mass and the cannulation sites. The durations of cardiopulmonary bypass, aortic clamping and circulatory support were 260, 83 and 127 min, respectively.

Results

The duration of ventilation was 24 hours. The stay in the intensive care unit was two days. The postoperative follow-up was marked by the appearance of a chylothorax from first day postoperative at a constant flow: 300 cc/day of milky white liquid, which persisted for 02 weeks having benefited from parenteral nutrition with chest tube removal on the 16th postoperative day.

Discussions

Chylothorax is an uncommon but important problem in pediatric cardiac surgery and associated with increased mortality, cost and length of stay, as is the case of our patient [1]. Mery et al, in their meta-analysis, reported an incidence of 2.8% of chylothorax during pediatric heart surgery with an incidence that varied between 4 and 9% depending on the

study [2-3]. The interventions associated with a high incidence of postoperative chylothorax according to the literature are: Fontan or Glenn intervention [2], Norwood intervention, atrioventricular canal surgery, transposition of the great vessels surgery [3]. Czobor NR et al reported that the highest incidence occurred on the second postoperative day [4], chylothorax appeared on the first day for our patient. Factors favoring the occurrence of chylothorax postoperatively are: high systemic venous pressures, thrombotic states or the presence of large aortopulmonary collateral arteries [5-6].

The chylous is explained by the trauma of the lymphatic vessels during the dissection of the cardiac mass. Chylothorax is not only an obscure complication, it is also associated with prolonged mechanical ventilation and increased length of intensive care and hospital stays. Higher incidence of sepsis and inotrope use have also been reported. Sepsis is favored by continuous chest drainage and immunosuppression [7]. Therapeutic management varies according to the centers from parenteral nutrition with taking certain drugs such as Somatostatin or Octreotide which have shown their therapeutic efficacy [8-10], to surgical treatment with ligation of the thoracic duct [11] since it does not there no general consensus on the best protocol for the management of postoperative chylothorax [12], in our center, we opted for a simple attitude with chest tube removal of the patient on the 16th postoperative day, which allowed the drying up of chylous with a diet very rich in lipids.

Conclusion

Very exceptional serious postoperative complication that can be fatal. One of the causes of prolonged postoperative stay in congenital heart disease surgery. Associated with a high mortality rate after congenital heart disease surgery. Some require revision surgery to ligate the lymphatic vessels.

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