

# Cardiac Tamponade due to Chylopericardium after Cardiac Surgery

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**ABSTRACT** Chylopericardium as an isolated complication after open-heart surgery is a rare event. We present here a case of postoperative chylopericardium with cardiac tamponade and comment on the clinical course and treatment.

Chylopericardium as an isolated complication after open-heart surgery is a rare event, and its treatment has not been well established.

A 4-year-old girl with a history of cardiac disease, observed since the fourth month of age, was hospitalized for investigation. An atrial septal defect was diagnosed, and the ostium secundum atrial septal defect was closed during operation. The postoperative course was uneventful until the sixth day, when an enlarged mediastinum was observed on the chest roentgenogram. The echocardiogram revealed a small posterior pericardial effusion. At pericardiocentesis, 137 ml of a serosanguineous fluid was removed. The patient's clinical condition was good, and the patient was discharged 2 days later.

On the seventeenth postoperative day, the child was seen again with signs of respiratory distress, jugular distention, and paradoxical pulse. The mediastinum was very enlarged on roentgenography (Figure) and echocardiography showed a large posterior and anterior pericardial effusion. At repeat pericardiocentesis, 460 ml of yellow, turbid, and milky fluid was drawn. Culture was negative and the composition was as follows:

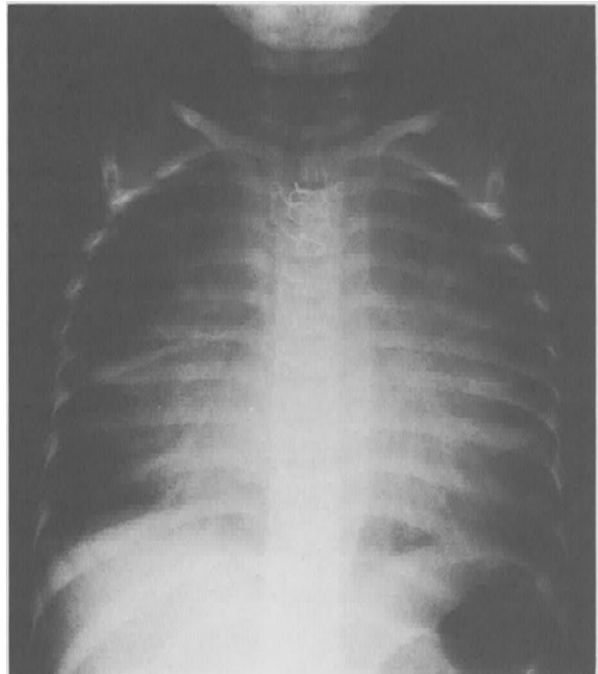
Glucose	61 mg/dl
Total protein	6.6 gm/dl
Albumin	4.5 gm/dl
Globulin	2.1 gm/dl
Cholesterol	10 mg/dl
Triglyceride	334 mg/dl
Total lipids	353 mg/dl

Having diagnosed chylopericardium, we performed a small pericardiotomy and left a pericardial drain in place. The patient was placed on a low-fat diet for 12 days. Continuous drainage persisted, so on the thirty-third postoperative day we performed an exploratory

thoracotomy. There was more than 500 ml of fluid in the pericardial space. A lymphatic vessel was identified posterior to the inferior vena cava in the area where the caval occlusion tapes were placed. It was doubly ligated and the chest closed. The patient's subsequent postoperative course was uneventful; the pericardial drain was withdrawn during the second day, and discharge from the hospital was possible on the seventh postoperative day. The patient has done well since then and has been observed for more than 5 years in the outpatient clinic.

## Comment

Chylopericardium as an isolated complication is a rare event after open-heart surgery. It was first reported by Thomas and McGoon [1] in 1971. A few other cases were published after the initial report, the majority in children [2-6]. This complication may be caused by injury to the thoracic duct or mediastinal lymphatic vessel or by obstruction to flow through the thoracic duct. In our patient, the lymphatic vessel was located posterior to the inferior vena cava and was injured during placement of surgical occlusion tapes for extracorporeal circulation.



*Chest roentgenogram revealing cardiac tamponade due to chylopericardium.*

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Recommended treatment should follow a stepwise regimen. In a symptomatic patient, the first measure should be a diagnostic pericardiocentesis. If effusion persists, a subxiphoid pericardial drain should be placed. The patient should be started on a low-fat diet, and if persistent drainage is observed, an exploratory thoracotomy is recommended. Hargus and colleagues [3] suggest surgical intervention when drainage exceeds 1,500 ml/day in adult patients or (100 ml × year of age)/day in children, when the drainage persists for 7 to 10 days, when the debilitated patient does not tolerate continuous fat loss, and when cardiac tamponade develops. It seems, however, that most patients have to undergo surgical exploration (at a proportion of 3:1 in reported cases, compared with conservative measures). This fact favors an early operation that might avoid prolonged hospitalization as well as deterioration of the patient's clinical and nutritional status.

## References

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## REVIEW OF RECENT BOOKS

### **Trachea and Lung Surgery in Childhood (Progress in Pediatric Surgery; Vol 21)**

*Edited by Peter Wurnig*

*Berlin, Heidelberg, New York, London, Paris, Tokyo,*

*Springer-Verlag, 1987*

*144 pp, illustrated*

*Reviewed by J. Alex Haller, M.D.*

This volume edited by Professor Peter Wurnig of Vienna is one in the Progress in Pediatric Surgery series and addresses current problems in the surgery of the trachea. While each of the sections is well written, they are all based on very small series from European children's hospitals. There is a wide representation from European centers but there are no American authors and the references are largely European and not international. There is basically no new information that has not been avail-

able to American thoracic and pediatric surgeons, but there are several good update articles, especially on congenital cystic adenomatoid malformation of the lung and free periosteal grafts in tracheal reconstruction. One unusual paper on sequestration of the lung by a group of Berlin pediatric surgeons quarrels with the terminology and prefers the term *lung separation* rather than *sequestration*. They maintain remarkably that sequestration should be used only for "dead, formally functioning and demarcated tissue" and do not recognize that this was the very narrow use of the term for infection of the bone. Apparently there is a translation problem because this term is now widely accepted in the English literature and does not relate to a sequestrum of the bone at all. While this is a well-done volume in the series, it does not contribute new information to the pediatric thoracic literature.

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