



Original article

# Video-assisted thoracoscopic pleuro-pericardial window for recurrent massive pericardial effusion in patients with known malignancy

Amr M. Allama\*

Cardiothoracic Surgery Department, Faculty of Medicine, Menoufia University, Sheben-Elkom, Yassen Abd-Elghaffar Street, Menoufia, Postal Code 32511, Egypt

Received 4 October 2016; revised 18 October 2016; accepted 23 October 2016

Available online 27 October 2016

## Abstract

**Background:** Multiple treatment options for pericardial effusion are present including medical treatment, needle pericardiocentesis, percutaneous catheter drainage, and surgical drainage. Surgical intervention includes subxiphoid drainage and pleuro-pericardial window. This study focuses on video-assisted thoracoscopic surgery as a treatment option for recurrent massive malignant pericardial effusion.

**Methods:** This was a prospective study carried out at Menoufia Faculty of Medicine University Hospital. It included 20 patients with a known history of malignancy and an echocardiographic evidence of massive recurrent pericardial effusion. We used video-assisted thoracoscopy to create a large window in the pericardium to the pleura.

**Results:** This study included 20 patients with a mean age of 45 years. The primary malignancy was breast cancer in 11 cases (55%), lung cancer in 4 cases (20%), lymphoma in 3 cases (15%), leukemia in 1 case, and cancer cervix in 1 case. The operative time ranged from 40 to 75 min. Postoperative complications occurred in 2 cases (10%). The chest tube duration ranged from 2 to 7 days, and the mean postoperative hospital stay was  $4.6 \pm 1.8$  days. Histopathology of the pericardial specimen was positive for malignancy in 11 cases (55%) and revealed non-specific pericarditis in 9 cases (45%). We did not record postoperative mortality, but at 3 months postoperatively, 3 patients were dead due to progression of their primary malignancy, and one patient developed recurrence.

**Conclusion:** We concluded that thoracoscopic pleuropericardial window is an excellent treatment option for recurrent massive malignant pericardial effusion in patient who could tolerate the procedure.

Copyright © 2016, The Egyptian Society of Cardio-thoracic Surgery. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

**Keywords:** Thoracoscopy; VATS; Pericardium

\* Fax: +20 482573339.

E-mail address: [amrallama2005@yahoo.com](mailto:amrallama2005@yahoo.com).

Peer review under responsibility of The Egyptian Society of Cardio-thoracic Surgery.

## 1. Introduction

Pericardial effusion occurs when the rate of pericardial fluid production is more than the rate of fluid absorption. The nature of the fluid may be serous, purulent, or hemorrhagic, or a combination of these types [1]. Pericardial effusion secondary to malignancy classically occurs either by direct local invasion of the pericardium, and sometimes the myocardium itself, or by distant metastatic involvement of the pericardium. It could also result from lymphatic drainage obstruction due to mediastinal lymphadenopathy [2]. A wide range of treatment options are present including medical treatment, needle pericardiocentesis, percutaneous catheter drainage, and surgical drainage [3]. Needle pericardiocentesis is better done with echocardiographic guidance. It is used for diagnostic purpose, and it could be used to relieve tamponade and insertion of a percutaneous catheter for continuous drainage. Percutaneous echocardiographic guided balloon pericardiotomy could be used for drainage of the pericardial space by creating a hole between it and the pleural space [2]. Surgical intervention includes subxiphoid drainage and pleuro-pericardial window. In subxiphoid drainage, a large drain is inserted in the pericardial space through a small upper abdominal incision. In pleuro-pericardial window, a larger opening is made in the pericardium allowing continuous drainage of the pericardial space into the larger pleural space. The retrieved fluid and pericardial tissue can be further examined for diagnostic purposes. This could be done by a limited anterior thoracotomy or thoroscopically [3]. This study focuses on video-assisted thoracoscopic surgery (VATS) as a treatment option for recurrent massive malignant pericardial effusion.

## 2. Patients and methods

This was a prospective study carried out at Menoufia Faculty of Medicine University Hospital from February 2014 to July 2016. The ethics committee of Faculty of Medicine Menoufia University approved this research. Inclusion criteria included patients with a known history of malignancy and an echocardiographic evidence of massive recurrent pericardial effusion. Exclusion criteria included; children (less than 18 years), patients with pericardial effusion without associated malignancy (pericarditis, renal, or cardiac), patients with first presentation pericardial effusion (not recurrent), patients with constrictive pericarditis (marked pericardial thickening), patients with bad general condition unfit for general anesthesia or not tolerating single lung ventilation, and emergency cases requiring rapid relief of tamponade (in these patients subxiphoid drainage was preferred). All patients had full preoperative laboratory investigations (including complete blood count, liver function tests, kidney function tests, prothrombin time, random blood sugar, and arterial blood gases), electrocardiography, chest X-ray, and echocardiography. Computerized tomography scan was performed to all cases to exclude constrictive pericarditis, to determine the presence of localized or loculated pericardial effusion, and to detect the presence of associated pleural effusion.

The side of the operation was selected according to the presence of loculated pericardial effusion and the association of pleural effusion, otherwise, the left side was selected. If there was a huge pericardial cavity occupying most of the left hemithorax and limiting the working space, the right side was selected. All patients were operated under general anesthesia with double-lumen endotracheal intubation (single lung ventilation). Patients were in the supine position with elevation of the operated side.

We used 0° telescope which was introduced by 10 mm trocar mostly in the 5th intercostal space at the anterior axillary line. Two working ports were made in the 4th and 6th intercostal spaces at the mid-axillary line. The pleural cavity was explored for any abnormalities and any associated pleural effusion was aspirated. A large window (about 3–4 cm diameter) was made after identification and preservation of the phrenic nerve (Fig. 1). The window was made posterior and or anterior to the phrenic nerve in the left side, and anterior to the phrenic nerve in the right side and the pericardial fluid was aspirated. Any septations or loculations were taken down. The pericardial specimen was sent for histopathology. A pleural space drain (size 32 to 36) was inserted through the 6th space port and was removed when the daily drainage was less than 150 ml. Echocardiography was done at discharge and after 3 months for detection of recurrence.

### 2.1. Statistical analysis

Data has been collected and entered to the computer using SPSS (Statistical Package for Social Science) program for statistical analysis, (version 20; Inc., Chicago. IL). Quantitative data has been shown as mean, and SD, while qualitative data was expressed as frequency and percent.

Download English Version:

<https://daneshyari.com/en/article/8668693>

Download Persian Version:

<https://daneshyari.com/article/8668693>

[Daneshyari.com](https://daneshyari.com)