

Management of Malignant Pleural Effusions by Talc Pleurodesis

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Abstract

Since July 2002, the Cardiothoracic Surgical team started talc pleurodesis with or without surgical assisted video thoracoscopy. This paper reports a retrospective review of medical records of 6 patients who received talc pleurodesis from July 2002 to March 2003, three males and three females. The primary malignancy was proven histological in five patients. All the six patients presented with dyspnoea. Two patients received thoracocentesis 2 or 3 times while 4 had formal chest drains till pleurodesis. The total amount of fluid drained before pleurodesis ranged from 2 to 7 litres. One patient died from metastasis 1 month after pleurodesis with a Blake drain in situ. The pleurodesis success rate was 100% for the 5 patients that lived. All the patients had MPE as a consequence of metastatic malignancy. The patients were discharged home after pleurodesis with a Blake drain and grenade. The complete pleurodesis rate was 5/5. Pain was the most common complication of tetracycline and doxycycline pleurodesis. Talc pleurodesis is a relatively cheap and safe procedure undertaken at Cardiothoracic Surgical Unit, Christchurch Public Hospital. Chemical pleurodesis using talc is an important consideration: (PHD 2006 Vol 13 No 2 Pages 103 - 105)

CASE REPORTS AND SHORT COMMUNICATIONS

needle thoracocentesis to evaluate the appearance, lactic dehydrogenase level and chemical analysis of the exudate.⁶ The major indication of treatment is the relief of dyspnoea. The treatment options includes drainage and chemical or surgical pleurodesis.

Chemical pleurodesis is an effective way of treatment for many years. The common agents used for this purpose are talc, tetracycline, doxycycline and bleomycin.^{5,7,8} In a review of literature, Walker-Renard and his colleagues documented a success rate of 64% for chemical pleurodesis.⁷ The remission was based on the findings of chest radiograph, clinical examination and no recurrence. Talc was the most effective agent followed by tetracycline, doxycycline and bleomycin. Pain is the common complication of tetracycline and doxycycline pleurodesis.⁸

In this hospital, traditionally the team of Respiratory Physicians has managed MPE and they often use bleomycin or tetracycline. Since July 2002, the Cardiothoracic Surgical team started talc pleurodesis with or without surgical assisted video thoracoscopy. In Fiji, MPE is treated without a definite protocol and it carries a high morbidity like repeated aspirations or chest drains with long hospital stay. The aim of this paper is to audit the cases of talc pleurodesis treated in July 2002 to March 2003. The viability of this technique in Fiji will also be discussed.

Methods

A retrospective review of the medical records of patients treated with talc (insufflation) pleurodesis from July 2002 to March 2003 in the Department of Cardiothoracic

SHORT COMMUNICATIONS

Introduction

Pleural effusion (MPE) is a common and distressing condition at the end of life for many patients with advanced cancer.¹ It is caused most commonly by metastases of the breast, lung, gastrointestinal tract and by lymphomas. In male patients, 60% of MPE are caused by lung cancers, 20% by breast cancer or leukaemia, 7% from gastrointestinal tract, 6% from genitourinary system, and 11% from unknown primary site. In female patients, about 40% of MPE are caused by breast cancer, 20% from tumours arising in the female breast, 15% from lung, 8% from lymphomas or leukaemia, 4% from gastrointestinal tract, 3% from breast and 9% from tumours of unknown primary site.

Dyspnoea is the most common presenting symptom in patients with MPE, occurring in more than 90% of the cases.³ The pathogenesis of dyspnoea is not clear but several factors may be involved, including a decrease in the compliance of the chest wall, mediastinal shifting of the mediastinum, a decrease in the ipsilateral lung volume, and reflex stimulation from the lungs and chest wall.⁴⁻⁵ The severity of dyspnoea is dependent on both the volume of the effusion and the underlying condition of the lung and pleura.⁴ The diagnosis is made by

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Malignant pleural effusion (MPE) is a distressing condition with dyspnoea caused by carcinoma of the lung or other primary sites. About half of patients with MPE are caused by lymphomas, 60% by lung cancer, 20% by breast cancer, 15% by genitourinary tract, 11% by leukaemia, 7% by melanoma and 6% of unknown origin.²

Dyspnoea is the most common symptom in patients with MPE, occurring in more than half of the cases. The pathogenesis of dyspnoea is not clear but several factors may be involved, including a decrease in the compliance of the chest wall, mediastinal shifting of the mediastinum, a decrease in the ipsilateral lung volume, and reflex stimulation from the lungs and chest wall.⁴⁻⁵ The severity of dyspnoea is dependent on both the volume of the effusion and the underlying condition of the lung and pleura.⁴ The diagnosis is made by

Surgery, Christchurch Hospital, was undertaken. The case notes were reviewed for the audit.

There were 6 patients who received talc pleurodesis from July 2002 to March 2003, three males and three females. The ages range was 47 to 84 years with a mean of 64 years. The primary malignancy was proven histological in five patients. In one patient the pleural cytology was inconclusive but a CT scan suggested a possible Cholangiocarcinoma. Two females had cancer breast, one each had Epithelial Ovarian cancer, Non-small Cell lung Carcinoma and Adenocarcinoma of the lung.

All the six patients presented with dyspnoea. The interval between presentations with dyspnoea till intervention with talc pleurodesis ranged from two weeks to five months with a mean of 9.5 weeks. Two patients received thoracentesis 2 or 3 times while the other 4 had formal chest drains till pleurodesis. The total amount of fluid drained before pleurodesis ranged from 2 to 7 litres. The pleurodesis was done in the operating theatre for all six patients with or without Video Assisted Thoracoscopy and talc insufflation. A Blake drain was inserted in all.

One patient died from metastasis 1 month after pleurodesis with a Blake drain in situ. The other five were discharged within 2 weeks of the procedure with a grenade suction pump attached. The Blake drain was removed post pleurodesis when total drainage was less than 100 mls per day. The time between the pleurodesis and study ranged between three weeks to six months.

The pleurodesis success rate was 100% for the 5 patients that lived. The five did not have symptomatic pleural effusions after their Blake drains were removed. One patient had surgical emphysema and air leak for seven days while two had erythematous and discharging drain wounds but did not grow any organisms and settled with dressings. One had significant post pleurodesis chest pains of 7/10 while the other four had 3/10 or less. Four of the patients did not have any pain at the Blake drain site while one had discomfort in that area. All five patients agreed that the procedure had improved their quality of life. One of the patients has occasional dyspnoea attributed to metastatic disease to his lung parenchyma.

Discussion

All the patients had MPE as a consequence of metastatic malignancy. Even though the number studied is small; the primary pathology is representative of the causes of MPE.¹ There were 2 women with breast cancer. This is similar to the experience that cancer of the breast is an important cause of MPE. About 7-11% developed MPE during the course of their illness.¹

Shortness of breath was the primary reason why all 5 cases sought medical attention for MPE. Chernow et al noted in their series of 96 patients that shortness of breath was the commonest symptom.⁹ Four of the five cases had talc pleurodesis within a month of developing shortness of breath while 1 was treated 4 months after developing symptoms.

The patients were discharged home after pleurodesis with a Blake drain and grenade. The drain was removed at the Cardiothoracic ward when it drained less than 100mls per day. The complete pleurodesis rate was 5/5. Walker-Renard et al published a success rate of 93% (153 of 165 patients) with talc pleurodesis.^{3,4} Ong KC et al achieved 89% success rates (16/18 patients) with talc slurry while 89% success rates was achieved by Mager et al using talc insufflation after a 1 month follow up.^{10,11} A complete pleurodesis rate of 80-85% for tetracycline and 70-75% for bleomycin has been reported.¹¹

An important criticism with bleomycin is its relative expense as compared to talc and tetracycline. Pain was the most common complication of tetracycline and doxycycline pleurodesis.

Conclusions

Talc pleurodesis is a relatively cheap and safe procedure undertaken at Cardiothoracic Surgical Unit, Christchurch Public Hospital. The five patients discharged home have an improved quality of life as compared to before the procedure. Chemical pleurodesis using talc is an important consideration:

- As part of palliative management for MPE secondary to metastatic malignancies;
- Encourages early discharge and shorter bed turnover time;
- Is a cheaper and effective agent; and
- Has a relatively low morbidity including pain.

Dyspnoea is the most common presenting symptom in patients with MPE, occurring in more than half the cases

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(Ralph Waldo Emerson 1803 - 1882)

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