Chemical Pleurodesis with Tetracycline - A Short Term Follow up

Pages with reference to book, From 88 To 89

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Abstract

Therapeutic tetracycline pleurodesis was performed on 14 different inoperable surgical patients having symptomatic recurrent pneumothoraces (> 40 percent) and malignant pleural effusions over a period of six months in the medical/surgical units of Central Government Poly Clinic, Islamabad. The study included 9 males and 5 females ranging 27 59 years of their ages. Only one patient needed repeated intrapleural tetracycline instillation for complete control. The immediate results of this technique have been encouraging (JPMA 34 :88, 1984).

Introduction

Chemical pleurodesis with tetracycline first described by Goldszer et al. (1979) and Macoviak et al. (1982) is now one of the latest easier and safer therapeutic measures available for prevention of recurrent pneumothorax and malignant reaccumulating pleural effusion. It has minimal side effects and risks when compared with pleurodesis with other sclerosing agents (Thorsrud, 1965; Joynt and Laind, 1958) frequently used in the past i.e. (silver nitrate solution, talc, camphor in oil and kaolin) or surgical pleurodesis (Youmans et al., 1970). It is occasionally associated with severe, transient pleuretic pain and mild elevation of temperature.

Material And Methods

Pleurodesis with tetracycline was done on 8 cases of recurrent pneumothorax, I pyopneumothorax and 5 patients of malignant pleural effusion (14 inoperable candidates 9 males and 5 females), whose ages ranged from 27-59 years over a short period of six months.
The procedure adopted was, that prior to intrapleural tetracycline instillation, intercostal drainage was carried out for 5 - 7 days in recurrent pneumothorax or aspiration till dryness was achieved in the reaccumulative incapacitating malignant pleural effusion as the case might be. Powdered tetracycline (500 mg) was dissolved in 30 ml of normal saline and 5 ml of 1 percent xylocaine and was instilled in the pleural cavity through the chest tube and allowed to gravitate in the cavity. Concomitantly, the patient was sedated with intravenous diazepam 5-10 mg or morphine 2-5 mg for better tolerance of the procedure and possible postural changes needed for subsequent 2-3 hours. The patient was placed in trandelenberg position in the bed for 20 minutes to localized irritant to the apex.

Results

These inoperable patients were exposed to the potential benefit derived from tetracycline. The age and sex distribution of patients who underwent intercostal tetracycline pleurodesis technique is shown in the accompanying table.

Table
Age and Sex Distribution of the Patients Who Underwent Tetracycline Pleurodesis.

Diagnosis	Male	Female	Age	Total
Symptomatic recurrent pneumothorax	6	2	27–50 years	8
Recurrent Pyopneumothorax	–	1	42 years	1
Malignant pleural effusion	3	2	48–59 years	5

Recurrent pneumothorax was comparatively more prevalent in males in younger age groups than in females above 40 years of age.
Among males one had bilateral pneumothorax, right side being old and recurrent (>50 percent), pleurodesis done on right side and left sided pneuniothorax (<20 percent) was treated conservatively, which took 8 days to reabsorb completely and patient's stayin the hospital was 3 weeks.
In another male patient pleurodesis was attempted 3 times as he had a large subpleural emphysematous bulla in right lower zone (Bullectomy was contraindicated due to his preexisting ill-health and uncontrolled emphysema) and a localized small closed pneumothorax resulted at the site of emphysematous bulla, thus large incapacitating pneumothorax on right side was prevented and patient felt much improved then.
In a 42 year old fenale a recurrent pyopneumothorax was aspirated and pleurodesis with tetracycline performed. She was followed-up for 4 months to-date without any relapse.
In 5 cases of malignant pleural effusion the success of prevention of reaccumulation of. fluid was 60 percent after 2-3 months of follow-up. One patient died after 15 days of follow-up.
No complications due to this procedure were noted in the study.
Longest follow-up in this study is 6 months and the shortest 6 weeks. Overall results of this technique have been very encouraging especially in recurrent pneumothorax in younger individuals and in those where surgery is contiaindicated.

Discussion

No follow-up results of longer duration are available in the literature as this is a new technique. However recent short term follow-up reported by Goldszer et a!. (1979) and Macoviak et al. (1982) is promising, the follow-up duration is hardly 1 year.
It is strongly suggested that because of its success among inoperable elderly candidates, the intrapleural use of tetracycline should be done in the young- patieits presenting with recurrent spontaneous pneumothorax, failing such a course, the Surgeon may then opt for surgical abrasion or pleurectomy or even decortication. Yet it must still be a caution that in patients with massive ruptured bleb (s) or bulla (s), single or multiple tetracycline instifiation may not effectively control such an active air leak. One should resort to continuous intrapleural drainage in wch type of patients and expose them to tetracycline pleurodesis intermittently.

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