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The Clinical Course and Outcome of persistent air-leak in spontaneous pneumothorax in a regional hospital in Hong Kong

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Introduction

Pneumothorax is a common, yet challenging disease in respiratory medicine. Spontaneous pneumothorax (SP) is the most common type of pneumothorax in Hong Kong. A portion of patients suffers from persistent air-leak despite chest drain insertion. International guidelines advocate 5-7 days arbitrarily as persistent air-leak. Managements of the situation are diversified, while surgical intervention is still the gold standard to treat this situation. However, due to many different patient factors, conservative management or medical pleurodesis are applied. Most of the patients are kept in hospital waiting for the spontaneous resolution of pneumothorax. More update and advanced management may be able to apply in preventing the associated deconditioning with the disease, shortening the duration of hospital stay and suffering from patients.

Objectives

The aim of this study is to examine the characteristics and timing of the persistent air leak of SP in a regional hospital, and to review the updated treatment modalities in this challenging situation.

Methodology

The study population comprised of adult > 18 years old admitted into Princess Margaret hospital over a 2-year period from January 2008 to December 2009. Medical records and Chest X ray were reviewed retrospectively.

Result

A total of 291 episodes of pneumothorax were examined, 192 episodes were spontaneous pneumothorax, with further sub-analysis in 159 episodes of chest drain insertion. The mean duration of air-leak was 5 days in Primary Spontaneous Pneumothorax(PSP) and 11 days in Secondary Spontaneous Pneumothorax(SSP). More than 90% of patients in PSP will be resolved by Day 12, while about 90% of patients in SSP will be resolved by Day 27. We propose the date of aggressive management could be considered when there are still 50% more of the patients having air-leak, and it will be on Day 3 in PSP and Day 4 in SSP. The date of active

intervention is arbitrarily proposed and is subjected to debate. The consideration should be a balance between the benefits and the drawbacks of intervention. New treatment modalities include endobronchially by valve employment and intrapleurally with different sclerosing agent are evolving. These modalities could be applied to patients with borderline physical condition and lung function, for example COPD patients. The new advances challenge the existing guidelines of management. Therefore, a tailor-made approach and evidence-based management is necessary for each individual patient.