Adolescent Primary Spontaneous Pneumothorax: A Hospital's Experience

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Abstract

Objective: To study the demographic and clinical characteristics of adolescent primary spontaneous pneumothorax (PSP). Methods: Adolescent patients (age 10-18 years) with first presentation of PSP were recruited in this retrospective cohort study. Four categories of data, including demography, clinical symptoms at presentation, disease progress and recurrence were retrieved from the hospital records. Results: Ninety episodes of PSP in 63 patients (55 males and 8 females) were identified. The mean (SD) height, weight and body mass index percentiles were 60.2% (27.9%), 35.0% (21.1%) and 29.9% (21.8%) respectively. The commonest symptoms at presentation were chest pain or discomfort (90.5%) and shortness of breath (42.9%); none of them had cardiopulmonary compromise. Nineteen patients were treated conservatively whereas 29 and 15 patients were treated by tube thoracostomy and surgery respectively. There were totally 22 (34.9%) patients who suffered from recurrence, and the recurrence rates for the conservative, tube thoracostomy and surgery treatment groups were 26.3% (5/19), 52.7% (15/29) and 13.3% (2/15) respectively. Fifteen (68%) of the 22 recurrences occurred within 3 months after the first presentation. Conclusion: Adolescent PSP occurs mainly in tall thin boys of late teenage group and all of them are clinically stable. Conservative treatment can be considered for small PSP of size less than 30%. Tube thoracostomy should be considered in large PSP or failed conservative treatment. For patients treated with tube thoracostomy, persistent leakage (longer than 7 days) warrants surgical treatment.

Key words Adolescent; Primary spontaneous pneumothorax; Recurrence

Introduction

Pneumothorax is an abnormal collection of air in the pleural space and can be classified into 3 categories: spontaneous, traumatic and iatrogenic. Spontaneous pneumothorax is further classified into primary and secondary.

Primary spontaneous pneumothorax (PSP) is defined as pneumothorax occurring in otherwise healthy people with no apparent clinical lung diseases being found. Clusters of cases of PSP were found in many families, so some cases were postulated as autosomal dominantly inherited with variable penetrance and expression. Specific HLA typing was also suspected but no definite correlation was so far identified. PSP is rarely encountered in young children, and mostly found in adolescents and young adults. Since there are only a few epidemiology studies focusing on adolescents, the clinical characteristics and outcomes of PSP in adolescents are not fully understood.

Our department treats patients up to 18 years of age and hence all adolescents suffering from PSP will be admitted to our department. We assess the size of pneumothorax subjectively and categorise qualitatively into small and large size; initial treatment for small size PSP is conservative with oxygen therapy and/or simple aspiration, whereas for large size PSP tube thoracostomy is the treatment of choice.