Abstract. – Background and Objectives: Spontaneous pneumothorax is common between young, thin people, usually without previous history of any respiratory disease or symptom. Of note, there has been not observed any other characteristics or findings from thorax imaging (Rx and thorax computed tomography – CT) in these people, in exception of blebs or bullae in upper lobes of the lungs.

Materials and Methods: We studied 19 consecutive young patients (17-40 years old), admitted in the Department with spontaneous pneumothorax. An x-ray in the admission and a CT after complete lung re-expansion were performed in all patients.

Results: In a large percentage of our patients, 14 out of 19 (73.68%) was observed an abnormal pattern of the thoracic cage and the coexistence of blebs and/or bullae in the upper lobes.

Conclusion: The abnormal and particular pattern of thorax in the patients with spontaneous pneumothorax coexists with blebs of the lungs. This is a commonly observed finding.

Key Words: Spontaneous pneumothorax, Bullae, Chest radiography, Chest CT, Blebs.

Introduction

Spontaneous pneumothorax is common between young, thin people, usually without previous history of any respiratory disease or symptoms (e.g. asthma, chronic bronchitis, recurrent respiratory infections or so)1. Of note, there has been not observed any other characteristics or findings from thorax imaging (Rx and thorax computed tomography – CT), in exception of blebs or bullae in upper lobes of the lungs2.

Patients and Methods

We studied 19 consecutive young patients admitted to our Department with spontaneous pneumothorax. In 14 of them (73.68%) in their thorax-Rx we observed two common findings concerning the pattern of thoracic cage. First, the ribs of these patients are more than usually, horizontally orientated, and second, the apex of both hemithoraces are widely domed and something flat (Figure 1).

Results

While in the people without spontaneous pneumothorax the diameter of apex/diameter of base ratio (in the postero-anterior Rx) is about 1:2, in the people with spontaneous pneumothorax this ratio is about 3:4. This widening of the superior hemithorax may be attributed in the overgrowth (or upgrowth) of the superior ribs, mainly of the ribs between 2nd and 6th. In fact, (Figure 1), the diameter of hemithorax at the level of 2nd rib is 2-fold that at the level of 1st rib. Between 2nd and 3rd rib the hemithorax diameter is minimally increased, and after 3rd rib (almost till 10th rib) it remains almost unchanged.

Discussion

Peters et al3 compared chest roentgenograms between young people with pneumothorax and without it. Their only observation was that the male patients had longer chests and greater height-to-width ratios than the controls. Conversely, we believe the main difference be-
a more negative intrathoracic pressure and a redirection of inspiratory air into the upper bronchial tree. It may lead to an over-dilatation of some superficial alveolus to produce blebs or bullae.

References

