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Title: Computed tomography-detected apical bullae in young men with Marfanoid phenotype

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Body: Subpleural bullae in young men are often the cause of primary spontaneous pneumothorax (SP), which is one of the common thoracic surgical conditions requiring hospital admission. Screening and prevention SP have not been developed so far, because the lung bullae pathogenesis in young people is not known. One hypothesis suggests a hereditary weakness of the connective tissue, the most studied in patients with Marfan syndrome. The aim of this study was to investigate the prevalence of asymptomatic bullae among young patients with Marfanoid phenotype. High-resolution computed tomography (CT) performed 50 clinically healthy men with no episodes of primary SP in history. Marfanoid phenotype was diagnosed in identifying specific major and minor criterion (skeletal, skin, eye, vascular, and others), which together made it impossible to diagnose the full Marfan syndrome. Deficiency of alpha 1-antitrpisin was rejected after a genetic test. The average age of the surveyed was 24 years. The men were smokers with a little history of smoking. CT showed the presence of bullae in 12 men (24%). The frequent maximal size of bullae was 0.5-1cm and the average number of bullae was 1-6. In almost all of the cases bullae were located in the apex. In 5 cases bullae were spread more extensively and were found up to the level of the carina and in 2 patients also bellow the carina. Correlation analysis confirmed the association between bulls and smoking history, as well as the severity of skeletal changes. These data confirm the importance of hereditary diseases of connective tissue in the genesis of bullous emphysema.CT scan may be useful for determining the risk and prevention of primary SP.