various potential confounders across the life course. What about children with respiratory symptoms early in life? Studies have shown that there is an association between initial airway symptoms and later lung function and respiratory illnesses,³ and that subjects with asthma have persistent reduced lung function.⁴ Finally, did the authors account for family history of asthma and/or atopy or allergic sensitisation? In my opinion, many confounders and factors that may have an effect on the outcome were not addressed adequately in this paper, so the conclusions drawn may not be relevant.

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Impairment of the swallowing reflex in exacerbations of COPD

An exacerbation of chronic obstructive pulmonary disease (COPD) has a serious impact on disease progression and is associated with high medical costs, but the cause of about one-third of exacerbations cannot be identified.¹ Adequate protective reflexes in the airways play an important role in the prevention of aspiration of bacteria-containing oropharyngeal or gastric secretions. Impairment of these reflexes, such as the swallowing reflex, therefore represents a potential risk factor for exacerbations of COPD. We have conducted a cross-sectional survey to evaluate the prevalence of impairment of the swallowing reflex in patients with COPD and to determine whether this is a risk factor for COPD exacerbations.

Fifty clinically stable patients with COPD were enrolled from the outpatient clinic of Ishinomaki Red Cross Hospital, Ishinomaki, Japan. Patients who were current smokers and those with oral corticosteroid use, oral and pharyngeal cancer, previous head and neck surgery, neuromuscular disease and oesophageal disease were excluded. Twenty-five patients (22 men and 3 women) had at least one exacerbation during the previous year, while the other 25 patients (21 men and 4 women) were stable. In the exacerbation group the patients had 2.4 (range 1–10) exacerbations per year, and 20 patients (80%) required hospital admission. There was no significant difference between the stable group and the exacerbation group in age (mean (SE) 75.0 (1.3) years vs 77.2 (1.0) years), forced expiratory volume in 1 s (FEV₁) (mean (SE) 1.11 (0.11) l vs 1.07 (0.09) l), percentage predicted

in preserving lung tissue.⁵ In about 15% cases of acute pulmonary embolism, the collateral supply by bronchial arteries is insufficient. Pulmonary infarcts may be observed several hours later.⁴

The small air bubbles in the superior vena cava may originate from intravenous contrast media injection during CT scan and round pneumonia is a reasonable diagnosis of pulmonary opacities in this case.

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PULMONARY PUZZLE

Answer

The patient was submitted to lung and prostate biopsies which showed pulmonary alveolar proteinosis (PAP) and embryonal rhabdomyosarcoma (fig 1A and B). A radical cystoprostatectomy with an ileal conduit was performed without curative intention due to lymph node metastasis and 1 month later the patient underwent pelvic radiotherapy and doxorubicin-based chemotherapy. The patient refused treatment of the pulmonary disease. There was progression of the lymph node metastasis and no improvement in the pulmonary symptoms or radiological findings after treatment. The patient died 1 year after surgery as a result of intra-abdominal spread of the neoplasm.

PAP is a rare cause of respiratory failure which results from accumulation of lipoproteinaceous material in the alveolar space. It is believed to be caused by dysfunction of the clearance of surfactant from the alveoli by macrophages.¹ PAP is associated with high levels of autoantibodies against granulocyte-macrophage colony stimulating factor (GM-CSF) in the blood and tissues. Neutralisation of the biological activity of GM-CSF may cause neutrophil and alveolar macrophage dysfunction, which would explain the pathogenesis of PAP.² It may be secondary to many conditions such as acute silicosis and other inhalation syndromes, immunodeficiency disorders, infections, haematological malignancies (predominantly myelogenous leukaemias), metastatic melanoma to lung and breast cancer, but no association with prostate cancer is known.^{1–4}

These associated diseases and GM-CSF neutralisation suggest that PAP is characterised by defective immune function.²

Embryonal rhabdomyosarcoma of the prostate occurs predominantly in male infants and children and is a rare and highly malignant tumour. Fewer than 20 cases of prostate rhabdomyosarcoma have been reported in adults.⁵ In the present case there was a temporal association between the urinary and pulmonary symptoms. The PAP may have been a secondary manifestation of the prostate tumour, but its treatment did not improve the pulmonary symptoms or the radiological findings.

From the question on page 1002

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Figure 1 (A) Alveolar proteinosis (H&E stain, magnification 100×). (B) Embryonal rhabdomyosarcoma of prostate with myogenin positivity (immunohistochemical stain, magnification 400×).