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EDITORIAL

The lung physician and the antiphospholipid syndrome

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The antiphospholipid syndrome (APS) is characterized by repeated thrombosis on both the arterial and the venous side, and a high titre of antiphospholipid antibodies. Thrombosis can affect any organ, cause myocardial infarction, hepatic infarction or Budd-Chiari syndrome, renal problems, adrenal crisis, cerebral infarction, *etc*. [1]. It was first recognized in a subset of patients with systemic lupus erythamatosus (SLE), but since then a by now well-defined category of "primary APS" has emerged, *ie*. patients with the typical syndrome, but without any other signs or laboratory findings of SLE.

The syndrome is also of importance for the pulmonologist. Various lung manifestations have been described and a clear picture is beginning to emerge. The lung complications that have been described so far are pulmonary emboli [1, 2], pulmonary hypertension [1, 2], adult respiratory distress syndrome (ARDS) [2], alveolar haemorrhage [2–6], primary thrombosis of lung vessels, both large [2] and small [2, 6], and pulmonary capillaritis. Obviously, many of these manifestations are interrelated and occur together.

The first pulmonary complication to be described was pulmonary thromboembolic disease, which does not differ clinically from "ordinary" emboli. It is important to realize that this can be the first manifestation of the disease. Another manifestation is pulmonary hypertension [1, 2], especially when the syndrome is associated with SLE. Presumably this is due to microthrombi or emboli, though it has never been proven.

More dramatic manifestations are ARDS and alveolar haemorrhages. ARDS is often part of an "APS crisis" with multiple thrombosis in various parts of the body and respiratory insufficiency. Alveolar haemorrhage, apart from that associated with ARDS, can also occur in a less dramatic setting, where the patient presents with dyspnoea and large alveolar infiltrates seen on chest roentgenogram [5, 6]. Even substantial alveolar haemorrhage rarely causes large haemoptysis; indeed, the patient usually reports only small amounts of blood in the sputum, despite the fact that the haemoglobin level has decreased considerably and the chest roentgenogram shows large infiltrates [3, 4–7]. Typically, the lung has the capacity to clear the alveoli of blood within a few days, with subsequent improvement of the radiograph and the dyspnoea. New bleeding can occur, however, often at new sites.

The occurrence of large haemorrhages in a thrombotic syndrome can seem strange. However, in the article by MAGGIORINIE *et al*. [8] in this issue of the Journal, microscopic investigation of lung biopsies revealed capillary thromboses as the underlying cause. This seems to be the best explanation so far. In some patients, a pulmonary capillaritis has been reported [6], but in most published cases this has not been seen.

What is the role of the lung physician in this disease? The most important one is diagnostic. In a patient with known APS presenting with ARDS or large infiltrates as described above, the diagnosis of alveolar haemorrhage should be established and other causes excluded. Fibrebronchoscopy should be the method of choice. Small amounts of blood will usually be seen in the larger bronchi, and with lavage (where only small amounts of fluid are necessary) one will get back clear fluid with the typical strawberry colour. This is diagnostic in itself, and microscopic findings of haemosiderin-laden macrophages give further proof. Infection must be excluded by cultures.

It could be argued that lung biopsy with thoracoscopic methods is only minimally invasive and therefore could be performed to exclude other diagnoses. However, this procedure is not without complications, and the histopathological findings will be signs of alveolar heamorrhage, possibly thrombosis in small vessels (which probably have a patchy distribution and finding them may depend to some extent on luck), and in an occasional case evidence of pulmonary capillaritis. None of these findings would change the treatment that most clinicians would agree upon, most important of which is anticoagulant treatment (despite the occurrence of alveolar haemorrhage); in addition, steroids will be administered to any patient with severe symptoms and in many cases an immunosuppresive drug such as cyclophosphamide may be required. Thus, lung biopsy is not warranted except in rare cases where other diseases might be suspected.

APS is an interesting "new" disease and the exact mechanisms behind the severe disturbance of the coagulation are so far unknown. No doubt, in the future this will be revealed, and then more sophisticated treatment will be developed. In the meantime, we will have to treat with the drugs that are available. Our role as lung physicians is to help in diagnosis with the least invasive methods available.

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