

been reported as useful therapy; however, this therapeutic approach has not been standardized and will need to be studied further. The type of surgical therapy is based on the severity of joint damage. For early ON, core decompression and percutaneous debridement and drilling is recommended. For ON lesions prior to bone collapse, bone grafting and osteotomies are also a possibility. Once subchondral fracture collapse is evident, bone grafting, hemi-resurfacing and total hip arthroplasty are the treatment options.

Learning Objectives

- Describe the epidemiology and clinical presentations of ON in patients with SLE
- Explain the modifiable and non-modifiable risk factors for ON in patients with SLE
- Discuss the preventive measures for ON in patients with SLE
- Describe how patients with SLE and ON should be treated

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ALVEOLAR HEMORRHAGE

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Diffuse alveolar hemorrhage (DAH) has been described in a number of systemic autoimmune diseases, including systemic lupus erythematosus (SLE), antiphospholipid syndrome (APS), Behçet's disease, microscopic polyarteritis, cryoglobulinaemic

vasculitis, Henoch-Schönlein purpura, Goodpasture's syndrome, granulomatous vasculitis and others.¹

The potential clinical importance of this complication needs to be stressed. It is likely that the true frequency is significantly higher than the very low prevalence suggested by the paucity of reported cases. Diffuse alveolar hemorrhage syndromes are notoriously difficult to diagnose. In the majority of cases, there is little or no haemoptysis, even with large volume intra-alveolar bleeding. The radiological signs are sometimes florid but often highly non-specific, consisting of amorphous ground-glass attenuation on chest radiography or high-resolution computed scans of the thorax. Invasive or semi-invasive evaluation is generally required, specifically bronchoscopy, with or without a surgical lung biopsy.

In general, in treated autoimmune diseases, infiltrative lung disorders can, for practical therapeutic purposes, be divided broadly into opportunistic infection, which demands specific antimicrobial therapy and a reduction in immunosuppression, and a wide range of immunologically mediated processes, which demand the opposite approach: intensification of immunosuppressive therapy. Refinement of the differential diagnosis in the latter group is important, but less important than the exclusion of infection. Bronchoalveolar lavage (BAL) to exclude infection has been the pivotal investigation that has allowed an empirical immunosuppressive approach. A pragmatic approach of standard immunosuppressive therapy after the exclusion of infection is not, in itself, sufficient. Active steps must be taken to diagnose DAH.²

Learning Objectives

- Explain the main challenges in the differential diagnosis of alveolar hemorrhage in SLE
- Describe the options for the treatment of alveolar hemorrhage in SLE
- Discuss new trends in research on new markers for alveolar hemorrhage in SLE

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