10 Systemic Hypertension in Antiphospholipid Syndrome

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Introduction

In the original description of antiphospholipid syndrome (APS), Hughes described a correlation between hypertension and livedo reticularis [1]. Although hypertension is a recognized and common feature, the literature on hypertension in APS is surprisingly scanty. The information so far aggregated is mainly based on the renal/reno-vascular pathology and associated hypertension in the patients with APS/antiphospholipid antibody (aPL). Indeed, it was suggested that the hypertension seen in these patients is exclusively renal in origin. Recent studies, however, do not support this concept as the only explanation for hypertension. In this chapter we have outlined the possible mechanisms of hypertension in the patients with aPL.

Prevalence of Hypertension in APS and aPL

APS is classified as a primary disorder, primary APS (PAPS), and secondary APS in association mostly with systemic lupus erythematosus (SLE). Nasssanov et al described a prevalence of hypertension up to 50% in her series of 28 primary APS patients [2]. To our knowledge there are no previous studies on the prevalence of hypertension in primary or secondary APS and /or aPL-positive patients. In our cohort of 600 patients with aPL, 173 (29%) had definite hypertension requiring therapy. The prevalence of hypertension in primary APS or aPL-positive patients was significantly high (44%) as compared to 27 % of secondary APS/aPL-positive patients. Our patients with APS/aPL were relatively young (median age, 46 years) and, in contrast with essential hypertension which is more common in Afro-Caribbean population, most of our patients (greater than 90%) were Caucasian women [3]. Other risk factors like diabetes and obesity/overweight were present in less than 10% of these hypertensive patients.

Aetio-pathogenesis

Renal and reno-vascular pathology remains the major cause of hypertension in APS. Thrombotic microangiopathy (TMA) affecting the kidney has been described

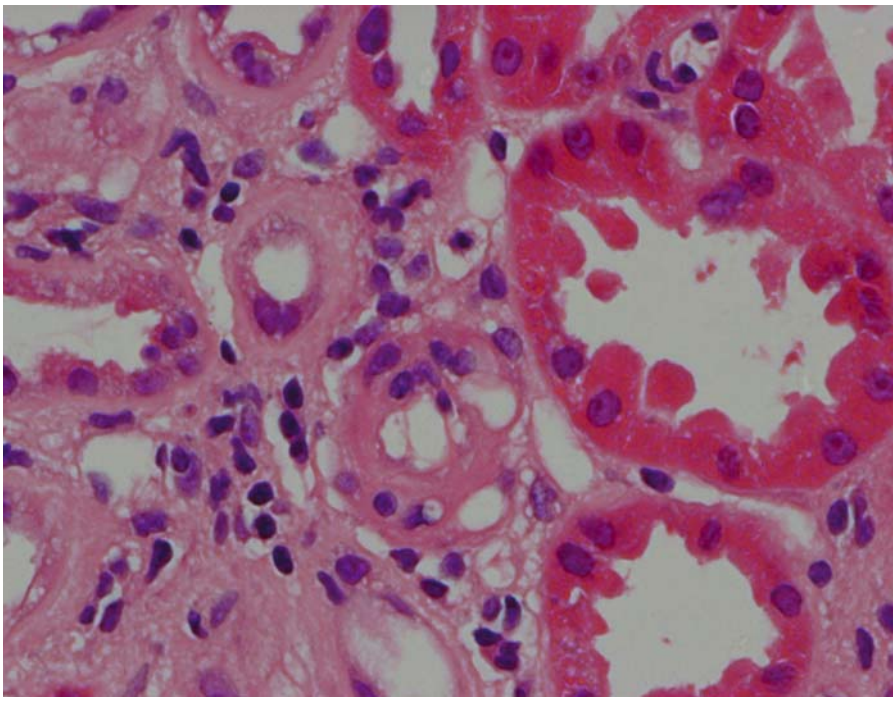

Figure 10.1. Renal thrombotic micro-angiopathy seen in a patient with APS and hypertension.

in both primary and secondary APS [4] and is reviewed in detail in elsewhere in this book. The renal impairment due to TMA ranges from mild to end-stage renal failure and mild-to-nephrotic range proteinuria is also not uncommon. Nochy et al described renal hypertension as a feature of APS in his patients with TMA [5]. The severity of hypertension varies from mild labile to severe accelerated hypertension. Hughes suggested that the labile hypertension seen in these patients fluctuates with the severity of livedo reticularis [1]. Malignant or accelerated hypertension is also not uncommonly observed in patients with TMA without any evidence of lupus nephritis (see Fig. 10.1) [6]. Previously, anecdotal reports of renal artery stenosis and hypertension in APS/aPL were reported and it is now an established fact that renal artery stenosis is more frequently seen in APS patients with uncontrolled hypertension compared to young aPL-negative hypertensives and healthy controls. The renal artery stenosis seen in these patients appears to be unique to this syndrome and is completely different from that seen in atherosclerotic disease and fibro-muscular dysplasia (see Fig. 10.2) [7]. Although the precise mechanisms are not clear, the renal artery occlusion may be secondary to thrombosis or possibly embolization from the cardiac valves. There is also a possibility that endothelin activation leading to smooth muscle hyperplasia and/or accelerated atherosclerosis are also pathogenic in renal artery stenosis. It may lead to renal infarcts and acute renal shut down has also been reported [8–10]. Obviously in patients with SLE, lupus nephritis may be an additional factor in the development of hypertension in patients with secondary APS.