events or cerebrovascular events, there were no differences between patients with symptomatic and asymptomatic PAD. Secondary prevention is recommended in the current American Heart Association/American College of Cardiology guidelines on PAD. Recommendations do not differentiate between symptomatic and asymptomatic PAD patients. The current study supports this approach and suggests adoption of secondary prevention methods for patients with asymptomatic PAD as detected only by a decreased ABI.

Natural History of Syphilitic Aortitis

Roberts WC, Ko JM, Vowels TJ. Am J Cardiology 2009;104:1578-87.

Conclusion: Cardiovascular syphilis is still present. A serologic test for syphilis is recommended in patients with dilated ascending aortas irrespective of whether or not they have aortic regurgitation.

Summary: In the 19th century, 15% of the adult population in the United States was afflicted by syphilis. Syphilology was a separate medical specialty devoted to the treatment of the manifestations of this disease. It is infrequent for patients with primary syphilis to develop tertiary syphilis. Syphilis is a difficult disease to study in that the spirochete *Treponema pallidum* cannot be convincingly demonstrated in histologic sections of the aorta in patients with dilated aortas presumably secondary to tertiary syphilis. In addition *T pallidum* cannot be cultured. There have been no large studies of cardiovascular syphilis since 1964. In this well-illustrated study, the authors present results of autopsies in 90 patients with characteristic morphologic findings of syphilitic aortitis. All but two patients were examined by a single author from 1966 to 1990. All 90 patients had extensive involvement of the ascending aorta by the syphilitic process. The sinus of Valsalva was spared in all but four patients. In 26% of the 90 patients, syphilis was the cause of death in patients in whom the aortic arch and descending thoracic aorta were examined. There was evidence of syphilitic involvement of the aortic arch in 49 of 54 patients (91%) and syphilitic involvement of the descending thoracic aorta in 47 of 52 patients (90%). In the 23 patients who died, death was secondary to rupture of the ascending or descending thoracic aorta in 12 and form severe aortic regurgitation in 10. One patient had severe narrowing of the osteum of the right coronary artery as the cause of death. Serologic testing for syphilis was performed in 40 patients and 28 (70%) had a positive finding. Patients with negative or nonreactive tests who did not undergo serologic tests for syphilis had histologic and morphologic findings in the aorta at autopsy similar to the finding in the patients who had positive serologic tests.

Comment: The paper is a fascinating review of the aortic manifestations of tertiary syphilis. Key points are that syphilis still occurs in the general population. Seventy-seven of the 90 cases in this series were from Washington, DC-area hospitals or institutions. Men outnumbered women 2:1. The series also serves to remind us that a negative serologic test does not exclude the presence of syphilis. As vascular surgeons become more involved in the treatment of patients with thoracic aortic disease, including the development of hybrid procedures to treat aortic arch disease, it will be necessary to keep in mind that the underlying etiology of the disease may in some cases still be tertiary syphilis.

Are Plasma Renin Activity and Aldosterone Levels Useful as a Screening Test to Differentiate Between Unilateral and Bilateral Renal Artery Stenosis in Hypertensive Patients?

Kotiliar C, Inserra F, Forcada P, et al. J Hypertension 2010;28:594-601.

Conclusion: Serum aldosterone levels, plasma renin activity, and aldosterone plasma renin (Ald/PRA) ratios are significantly different in patients with unilateral renal artery stenosis versus bilateral renal artery stenosis and from patients with essential hypertension.

Summary: The aldosterone to plasma renin activity ratio (Ald/PRA) is a common screening test for hyperaldosteronism as a secondary cause of hypertension in patients with resistant hypertension (Current Hypertension Reports 2007;9:353-9). The Ald/PRA ratio, however, is not currently used for diagnosis of RAS. There are no reports comparing renin-angiotensin-aldosterone system status between patients with unilateral RAS and those with bilateral RAS. This paper sought to evaluate the relationship between aldosterone levels and plasma renin activity as surrogate markers of renin-angiotensin-aldosterone system status in patients with unilateral RAS and those with bilateral RAS. The second objective was to determine the usefulness of the Ald/PRA ratio as a noninvasive test contributing to the differential diagnosis of unilateral versus bilateral RAS.

There were 708 hypertensive patients studied. Based on Mann and Pickering recommendations (Ann Intern Med 1992;117:845-53), patients at intermediate and high-risk of RAS were selected to undergo renal gadolinium-enhanced magnetic resonance angiography and arteriography. There were 66 patients in this group; 15 were excluded by diabetes or a low glomerular filtration rate. After consideration of the imaging studies, there were 51 hypertensive patients who were then studied, 16 with unilateral RAS, 16 with bilateral RAS, and 19 essential hypertensive patients with no evidence of RAS. Unilateral RAS was defined as lumen reduction $\leq$70% in one renal artery. Bilateral RAS was defined as the combination of at least 70% RAS in one renal artery and 50% RAS in the contralateral renal artery. Normal arteries were those with no lumen narrowing or lumen reductions of less than 30%. There were 19 normotensive individuals also included in the study. Aldosterone and plasma renin activities were reported at baseline and after stenosis resolution in those patients who underwent angioplasty and stenting.

Ald/PRA ratios (ng/dL per (ng/mL per h^{-1})) were higher in bilateral RAS (5.92 ± 2.30; $P < .001$) and lower in unilateral RAS (0.38 ± 0.17; $P < .001$) versus those patients with essential hypertension (1.52 ± 2.02). When the Ald/PRA ratio was >3.6, multilevel likelihood ratios were positive for bilateral RAS. When the ratio was <0.2, the likelihood ratio was negative for bilateral RAS. When the Ald/PRA ratio was between 0.2 and 3.6, the likelihood ratio for bilateral RAS was neutral. Receiver operator characteristic curve analysis identified an aldosterone/plasma renin activity <0.5 and Ald/PRA >3.7 to have the best sensitivity and specificity to detect unilateral RAS and bilateral RAS, respectively. Following intervention, plasma renin activity was significantly lower than basal renal activity in patients with unilateral RAS but not in those with bilateral RAS. In patients with unilateral RAS, postintervention aldosterone levels were approximately 30% of baseline, while in patients with bilateral RAS postintervention aldosterone levels were approximately three times lower than baseline. There were no differences in plasma renin activity and aldosterone levels over time in patients with essential hypertension.

Comment: The study suggests its patients can be categorized according to unilateral or bilateral RAS on the basis of Ald/PRA ratios. When the Ald/PRA ratio is <0.5, the patient will likely have unilateral RAS. When the Ald/PRA ratio is more than 3.7, bilateral RAS is likely. There is also a gray area of ratios between 0.5 and 3.7 that do not clearly differentiate hypertensive patients with unilateral and bilateral RAS, and many of these patients will have essential hypertension. A patient suspected of renal vascular hypertension potentially could be screened with Ald/PRA ratios. If the ratio is between 0.5 and 3.7, noninvasive testing to evaluate for potential RAS is indicated. Some will actually end up having RAS but most will not. However, when the ratio is <0.5 or >3.7, and one does not believe the ASTRAL trial (N Engl J Med 2009;361:1953-62), one might consider moving directly to a catheter-based study, as it is highly likely >70% RAS will be found in at least one renal artery.