

AORTOILIAC OCCLUSIVE DISEASE AND RESISTANT HYPERTENSION: A CASE REPORT

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Introduction

Aortoiliac Occlusive Disease is a variant of peripheral artery disease defined as atherosclerotic occlusion of the abdominal aorta, renal arteries, and iliac arteries. It has long been associated with symptoms such as claudication, impotence, and diminished distal pulses. Many of the long-term side effects associated with this disease are a result of chronic obstruction of blood flow to distal organs and peripheral vasculature. Atherosclerosis has been well studied in medical literature for decades, however, the pathogenesis of complete large-vessel occlusion and secondary hypertension is not well elucidated.

Case Report

A 39-year-old man with recently diagnosed heart failure with reduced ejection fraction (45-50%) and chronic kidney disease stage IV presenting with complaints of chest pain, shortness of breath, and lower extremity edema.

Physical exam on admission was notable for pulmonary crackles, S3 gallop, lower extremity pitting edema, and dopplerable monophasic dorsalis pedis pulses bilaterally. He was initially diagnosed with acute decompensation of heart failure and subsequently diuresed with symptomatic improvement.

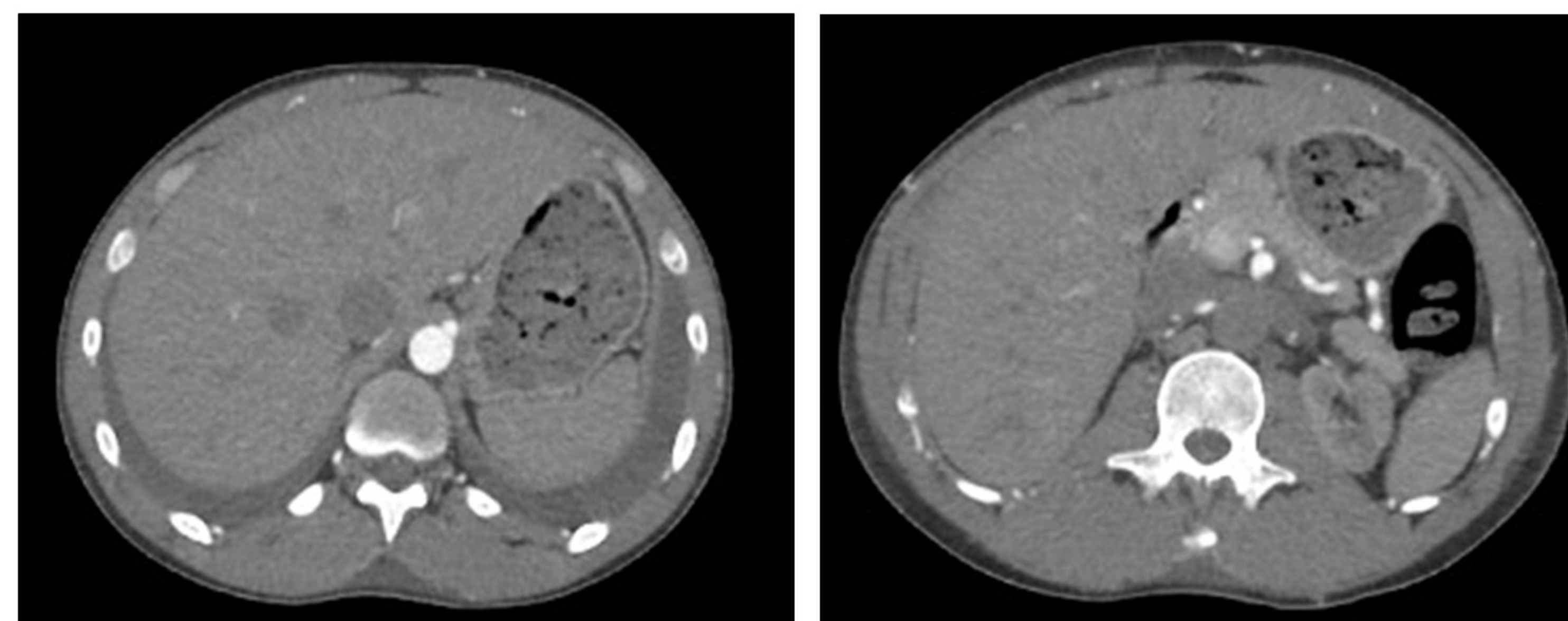
While admitted, he was noted to have refractory hypertension despite numerous (>7) antihypertensive agents. Secondary causes of hypertension were pursued and ultimately negative, including plasma metanephrines and salivary cortisol testing. Hyperaldosteronism workup was deferred given the need for washout due to recent Aldactone use. Notably, renal duplex ultrasound showed right renal artery stenosis. Follow-up CT Angiogram demonstrated complete abdominal aortic occlusion at the level the renal arteries with high-grade renal artery stenoses bilaterally (Figures 1-3). Treponema testing was negative and clinical history was not consistent with large vessel vasculitis. Ultimately, it was deemed likely that a previous aortic dissection caused vessel wall scarring and subsequent atherothrombotic occlusion. This diagnosis is difficult to confirm, although strongly corroborated by pathology slides (Figures 4, 5). He underwent successful aortic interposition bypass with right renal endarterectomy shortly thereafter. Post-operatively, he has demonstrated continued improvement in renal function and systolic pressures.

Discussion

This case report highlights the importance of pursuing a thorough work up in the evaluation of resistant hypertension, especially in young patients. While aortoiliac occlusion causing renovascular hypertension is a rare phenomenon, other causes of renal artery stenosis (RAS) are not uncommon and can be subtle or missed on screening renal duplex vascular imaging. Though this patient had bilateral RAS, his ultrasound imaging only demonstrated unilateral stenosis.



Figure 1. Coronal View. Complete occlusion of the abdominal aorta at the level the renal arteries. Right renal artery is patent with severe stenosis at its origin. Left renal artery is small with severe stenosis at its origin.¹



Figures 2, 3. Axial view of Figure 1¹

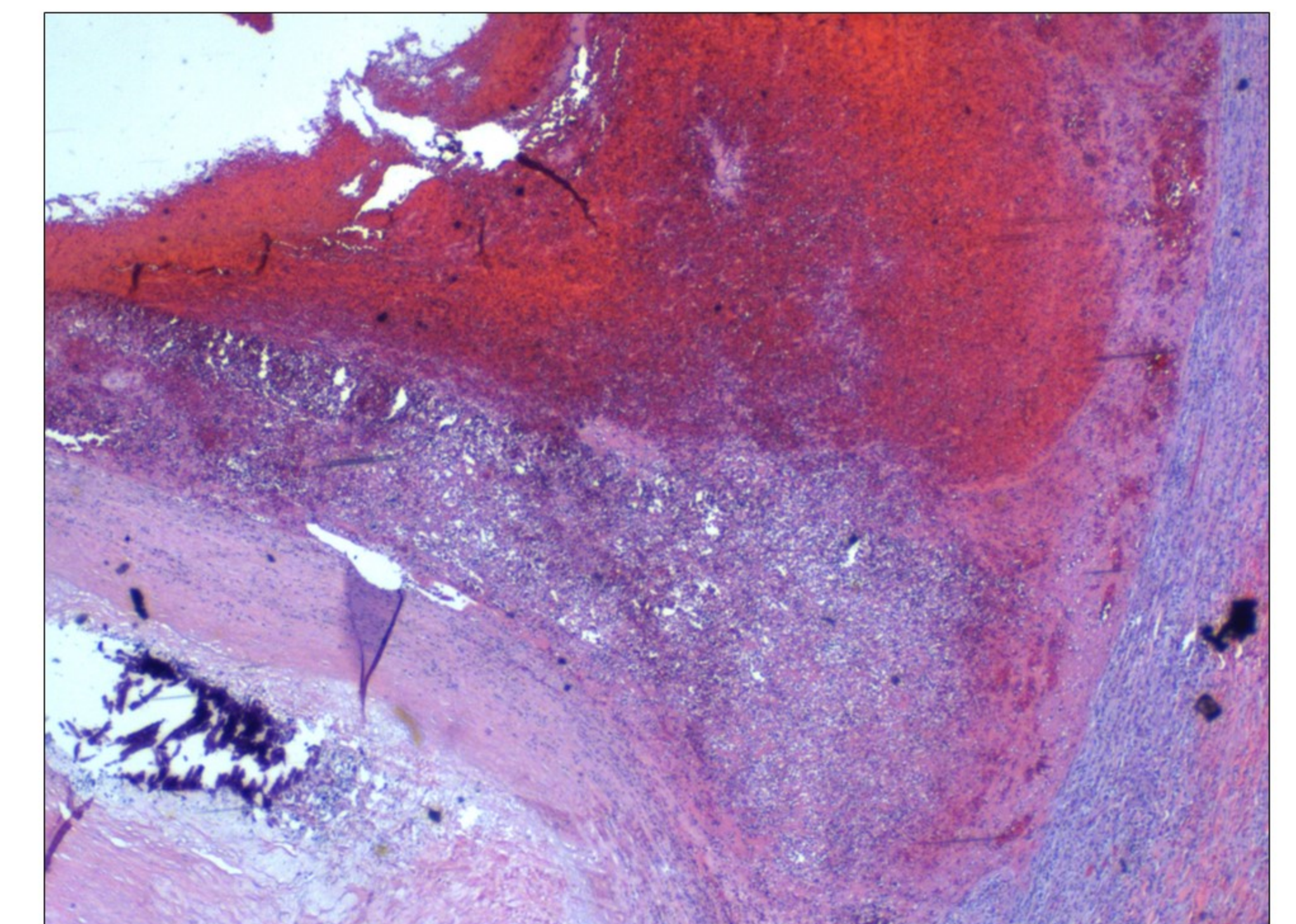


Figure 4. Infrarenal aorta: sectioning reveals a tan yellow atheromatous surface with areas of hemorrhage. The lumen appears occluded. No calcifications are identified. Consistent with organized blood clot or thrombus.²

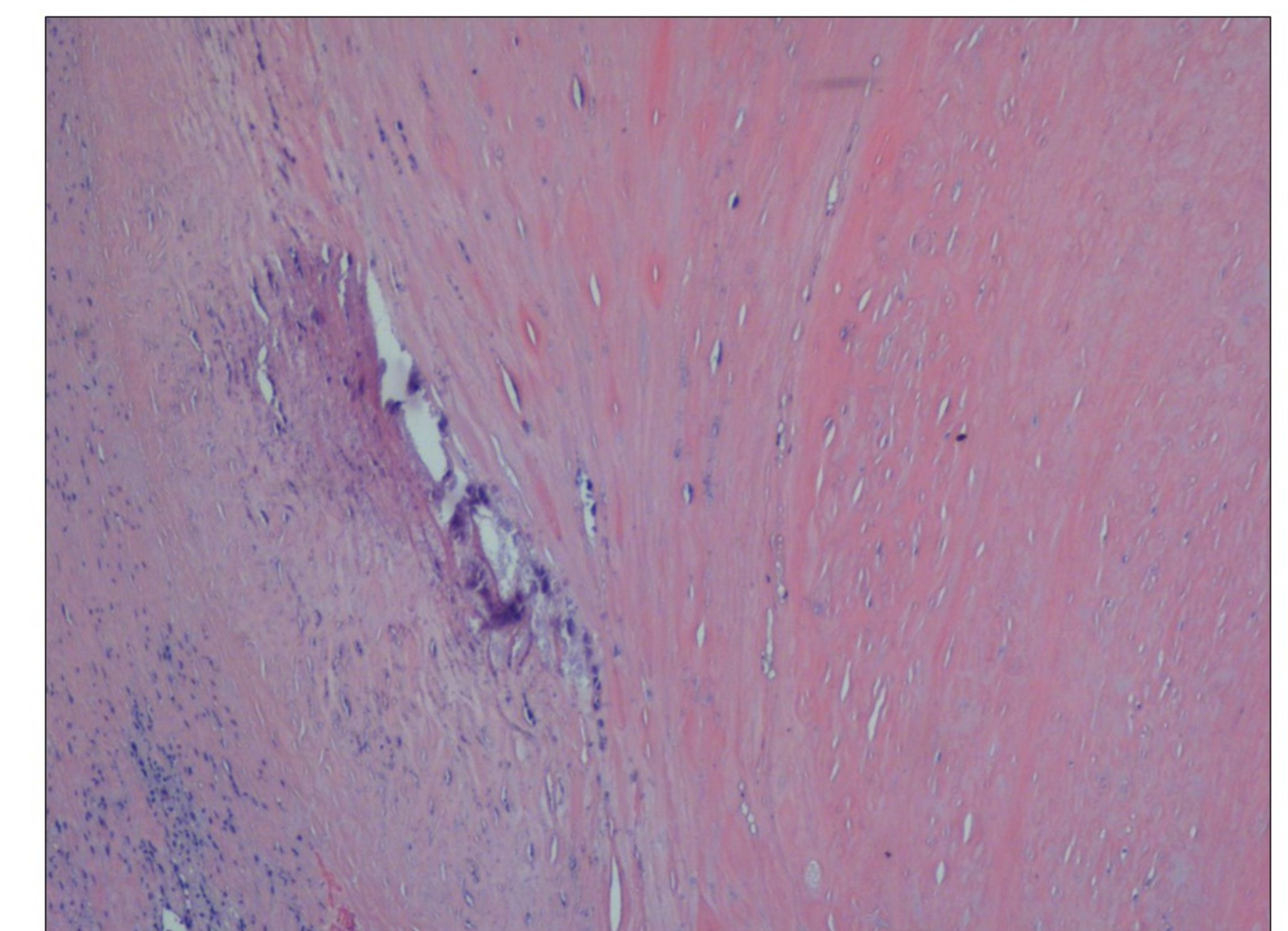


Figure 5. Aortic iliac plaque: Hyalinized plaque with dystrophic calcification and hyperplastic vascular intima. Aggregate of tan yellow atheromatous plaque with marked stenosis. No calcifications are identified. Some of the lumens appear occluded.²

1. Narrative courtesy of Dr. Ryan Majoria, Our Lady of the Lake Diagnostic Radiology
2. Interpretation courtesy of Dr. Anthony Harton, Pathology Group of Louisiana