Abstract
We present a case of a 66-year-old man who presented with a history of Right Hemianopia and Right sided facial droop and weakness. CT and MRI brain imaging demonstrated areas of infarction affecting the vascular regions supplied by Left Middle Cerebral Artery and Left Posterior Cerebral Artery circulation. Carotid Duplex Arterial imaging demonstrated moderate Left Internal Carotid Artery Stenosis and CT Angiography demonstrated a dominant Left Posterior Communicating Artery. The origin of the multi-territory Stroke as demonstrated on the MRI scan was his underlying Carotid disease. The patient underwent a successful Left Carotid Endarterectomy.

This case highlights the fact that patients presenting with isolated Posterior Cerebral Artery territory stroke or mixed Posterior Cerebral Artery and Middle Cerebral Artery territory strokes and ipsilateral Internal Carotid Artery stenosis, should have a low threshold to be assessed with CT or MR Brain Angiography to determine if variants in Cerebral Circulation exist.

Keywords
Ischaemic stroke, Carotid artery stenosis, Foetal variant posterior, Communicating artery

Introduction
Stroke is a common condition with multiple underlying aetiologies. Multi-territory Stroke involving both Anterior and Posterior Cerebral circulation is normally attributed to Cardio-embolic disease. In a small but significant proportion of the adult population there is a Foetal variant Posterior Communicating Artery [PCOM] which supplies the Posterior Cerebral Artery [PCA] from the Anterior Cerebral circulation [1]. In these patients symptomatic ipsilateral Carotid Artery disease can present with both Anterior Cerebral circulation and PCA territory Stroke [2].

Case Report
A 66-year-old man presented with a one day history of Right Hemianopia and a 6 hour history of Right sided facial droop and weakness. His risk factors included Hypertension, Hypercholesterolaemia and a 50 pack year smoking history. Clinical examination confirmed above findings and initial Brain Computed Tomography [CT] scan demonstrated areas of low attenuation in the left Cerebral Hemisphere, involving the left Caudate Nucle-
Cardiac monitoring demonstrated Sinus Rhythm without any significant Atrial Arrhythmias. Haematological and Biochemical parameters were within normal limits. Carotid Duplex Arterial imaging demonstrated patent bilateral Common Carotid Arteries with a moderate Left Internal Carotid Artery [ICA] Stenosis quantified through velocity measurements at 50-59%. This was initially thought to be a coincidental finding as Posterior Circulation Infarcts could not be normally explained with Carotid Stenosis; however it was decided to qualify these findings further with CT Angiography.

CT Angiography demonstrated a large ruptured plaque of heterogeneous morphology in the Left ICA associated with a propagating Thrombus (Figure 3). These findings were associated with a dominant Left PCOM feeding the Left Posterior Cerebral circulation and thereby explaining the fact that the plaque present in the Left ICA was able to seed the Left Middle Cerebral and the Left Posterior Cerebral circulation and in fact; the origin of the multi-territory Stroke as demonstrated on the MRI scan was not Cardio-Embolic but in fact related to his underlying Carotid disease. The patient underwent a successful Left Carotid Endarterectomy and has made an excellent functional recovery. He remains on high dose Statin and Anti-Platelet therapy. The decision to investigate the presumed moderate Carotid Stenosis demonstrated on Duplex imaging with CT Angiography was central to the diagnosis and further management.

**Discussion**

The importance of this case is to highlight unusual presentations of common conditions. Stroke has multiple aetiologies including Atherosclerotic Large Vessel

Figure 2: MRI Diffusion Weighted Imaging of the Brain demonstrating multiple areas of infarction affecting the vascular regions supplied by Left MCA and Left PCA circulation.

Figure 3: CT Carotid Angiography demonstrating a large ruptured plaque in the Left Internal Carotid Artery (white arrow).
plex imaging alone does not allow for Intra Cerebral Vasculature to be determined and there is a risk that patients with the above presentation with mild to moderate ipsilateral Carotid Stenosis may be offered best medical treatment instead of Surgery based on the presumption that the Stroke may be Cardio-embolic in nature. Given the benefits of Carotid Endarterectomy in symptomatic stenosis [5] and the incidence of Foetal variant PCOM; we highlight the fact that patients presenting with isolated PCA territory stroke or mixed PCA and MCA territory strokes and ipsilateral ICA stenosis, should have a low threshold to be assessed with CT or MR Brain Angiography to determine if variants in Cerebral Circulation exist.

References