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Ahmad Sobri Muda, Mohamad Syafeeq Faez Md Noh, Ezamin Abdul Rahim , Noor 'Ain Mohd Nasir, Mohd Fandi AlKhafiz Kamis.....1

ENDOVASCULAR THROMBECTOMY (EVT) OF AN ATHEROSCLEROTIC PLAQUE MASQUERADING AS THROMBUS IN A LARGE VESSEL OCCLUSION (LVO) STROKE

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KEY POINT:

Black blood sequence MRI is useful for the evaluation of atherosclerotic plaque in intracranial atherosclerotic disease (ICAD).

CASE REPORT:

A 37-year-old male with a history of hypertension and hyperlipidaemia presented with acute stroke at 4.5 hours, with a NIHSS score of 4. MRI revealed a left basal ganglia infarct, with a left M1 segment large vessel occlusion (LVO) and suspicious plaque enhancement on the black blood sequence measuring about 1.5mm in length [Figure 1]. Angiography with cone beam CT (VasoCT) showed suspicious ICAD, with short segment stenosis at the M1 segment.

Complete recanalization (TICI 3) was achieved after three passes via thrombectomy, using the 'Solumbra' technique. A pale, firm lesion was primarily retrieved, accompanied by minimal clots. Patient was discharged at day 10 with a NIHSS score of 1.

Histopathological examination of the lesion confirmed presence of fibro myxoid connective tissue with macrophages, suggestive of an atherosclerotic plaque [Figure 2]. The enhancement seen on the BB sequence at the wall of the left middle cerebral artery was in fact, plaque enhancement.

The endovascular treatment of intracranial atherosclerotic plaque causing stenosis is always balloon angioplasty or intracranial stenting. In rare circumstances as demonstrated by this case, the aspiration thrombectomy catches some unstable atherosclerotic plaque mixed with blood clot that is causing acute stroke in this patient.

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FIGURE LEGENDS:

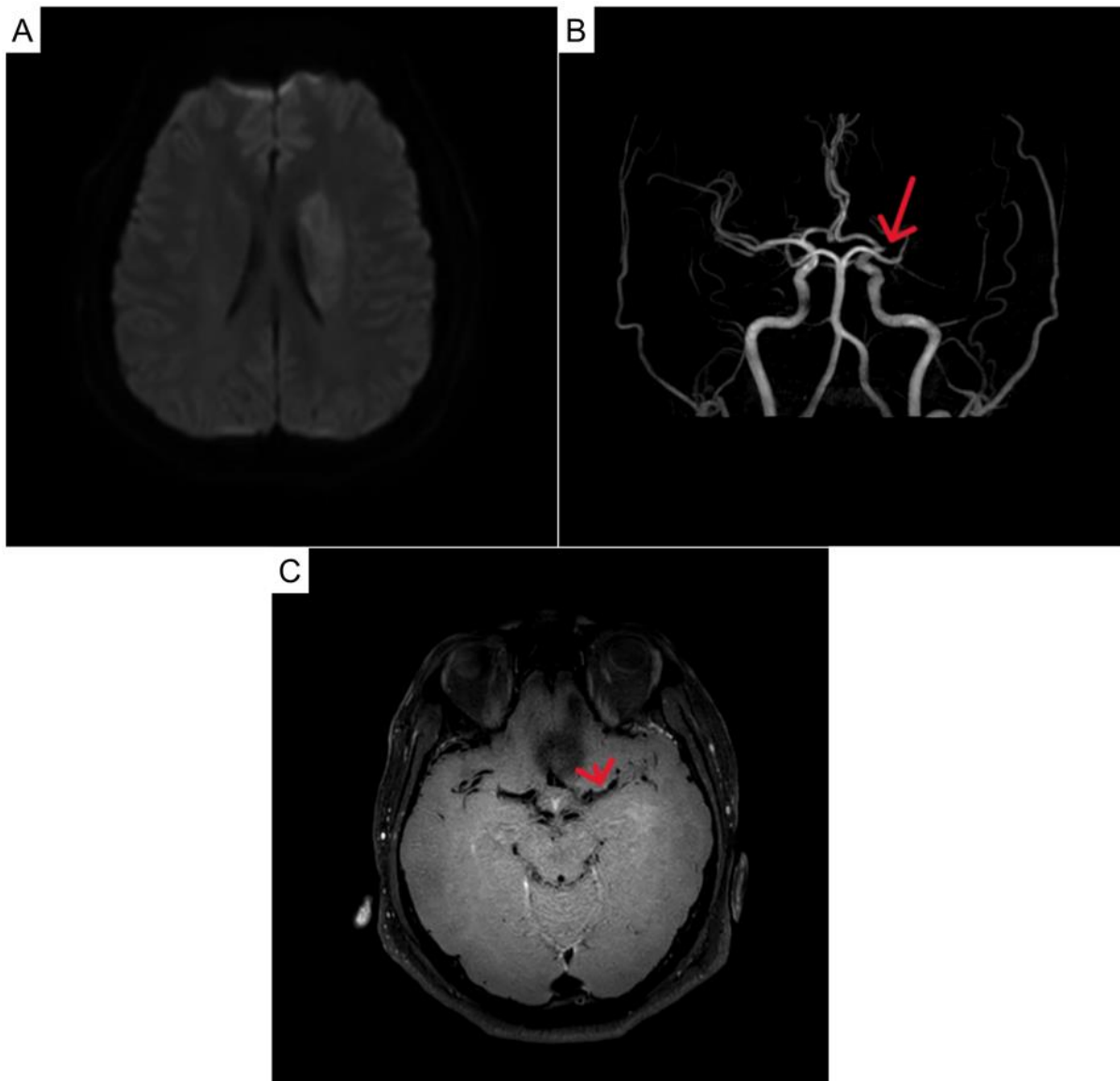


Figure 1: Hyperacute infarct at left basal ganglia evidence by hyperintense DWI signal (A) with M1 segment of left Middle Cerebral Artery occlusion on MRA (Arrow, B). MRI black-blood vessel wall imaging pointed the precise location of the enhancing plaque and point of occlusion (Short arrow, C).

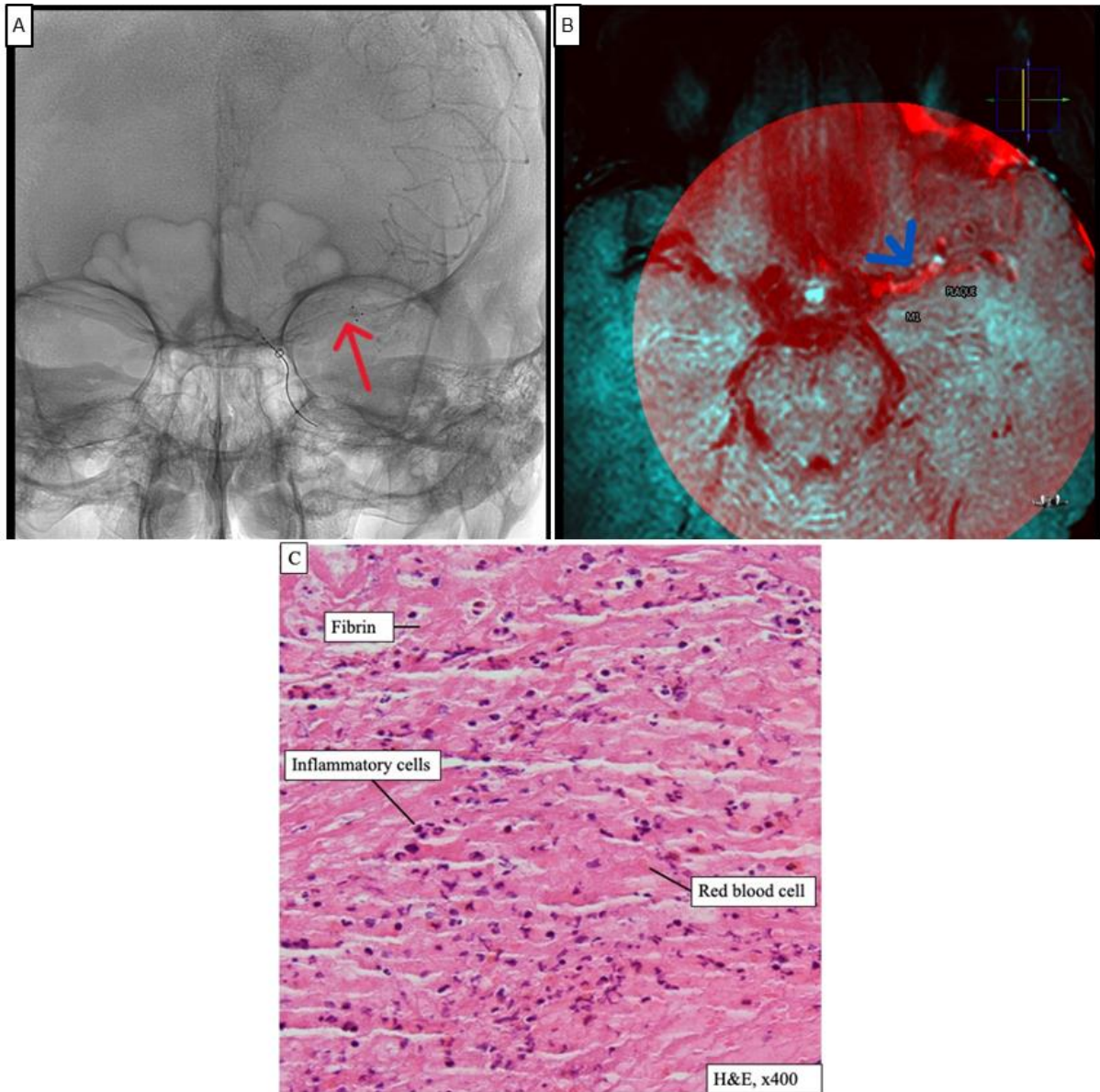


Figure 2: Deployment of stent retriever as part of SOLUMBRA technique, showed patent distal segment of the left MCA beyond the occlusion. (Arrow, A). Fusion image of cone beam angiography (VasoCT) with MRI black-blood vessel wall imaging pointed the precise location of the enhancing plaque and point of occlusion (Short arrow, B). The detached plaque seen as a whitish soft to firm consistency with minimal blood clot, shown on histopathological examination under lower power view of fibro myxoid connective tissue with interspersed foamy macrophages and thrombus formation thrombus. Examination under higher power revealed a thrombus formation composed of alternating red blood cells and fibrins with scattered inflammatory cells are trapped within (C).