

## Mineralizing Angiopathy of Lenticulostriate Arteries Presented as Stroke after Minor Head Trauma in a Eleven Month old Indian Girl

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### Abstract

**Background:** Mineralizing angiopathy of lenticulostriate arteries presents as stroke after trivial head injury. We present an infant with Mineralizing angiopathy of lenticulostriate arteries who presented as hemiparesis after trivial head injury.

**Case Report:** 11 month old girl presented with acute onset right hemiparesis with ipsilateral UMN facial paresis, after a left sided trivial fall. Magnetic resonance imaging (MRI) of brain showed acute infarct in left gangliocapsular and paraventricular region, Magnetic Resonance Angiography (MRA) was normal, CT Brain showed Bilateral punctate basal ganglia calcification along with hypodensity in left gangliocapsular and paraventricular region. Possibility of Post traumatic stroke secondary to Mineralizing angiopathy of lenticulostriate arteries was considered, oral Aspirin 3 mg/kg/day was initiated.

**Conclusion:** The report highlights the clinical and neuroradiological presentation of Mineralizing angiopathy of lenticulostriate arteries.

**Keywords:** Head Trauma; Stroke; Lenticulostriate Arteries; Mineralizing Angiopathy

### Introduction

Trivial head trauma is one of the risk factor for acute arterial ischemic stroke in infants and young children. Presents as acute hemiparesis after a trivial head injury. Affected infants present with facial paresis and hemiparesis soon after the injury and neuroimaging shows small infarcts in the basal ganglia. Basal ganglia and internal capsule are the most common anatomical regions affected, due to occlusion of lenticulostriate arteries [1-3]. Computed tomography (CT) scan shows punctate basal ganglia calcification. Prognosis is generally good.

### Case Report

11 months old girl with antenatal history of oligohydramnios in last trimester, born pre-term at 33 weeks gestation with birth weight of 2.5 kg. She had attained age-appropriate developmental milestones. At eleven months of age she was playing in sitting position on auto-rickshaw sit, while playing had a left sideward fall, she had sustained trivial head trauma on auto rickshaw sit, then she started crying, as father took her, he noticed right upper and lower limb paucity of movements. Her vital parameters were normal, anthropometric parameters were within normal range, general examination was normal, detail central nervous system examination showed upper motor neuron facial weakness on right side, right upper and right lower limb paucity of movements with brisker deep tendon reflexes than left, other systemic examinations were normal, possibility of stroke secondary to mineralizing angiopathy of lenticulostriate arteries was considered. Magnetic resonance imaging (MRI) of brain showed acute infarct in left gangliocapsular and paraventricular region, Magnetic

Resonance Angiography (MRA) was normal, CT Brain showed Bilateral punctate basal ganglia calcification along with hypodensity in left gangliocapsular and paraventricular region. Post traumatic stroke secondary to mineralizing angiopathy of lenticulostriate arteries was confirmed. Patient was initiated on oral Aspirin 3 mg/kg/day. The report highlights the clinical and neuroradiological presentation of mineralizing angiopathy of lenticulostriate arteries.

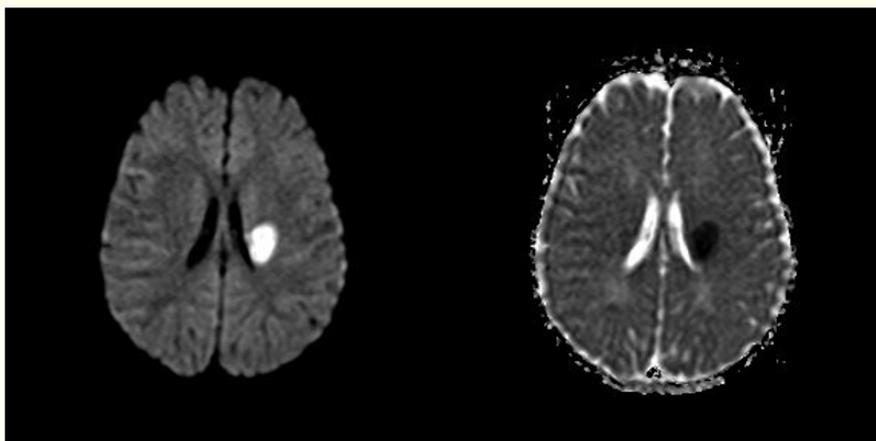


Figure 1a

Figure 1b

**Figure 1:** Magnetic resonance imaging (MRI) of brain showing diffusion restriction (figure 1a), with corresponding hypointensity on apparent diffusion coefficient map (figure 1b) in the left basal ganglia. Magnetic Resonance Angiography (MRA) was normal (Not shown).



Figure 2a

Figure 2b

**Figure 2:** Bilateral punctate basal ganglia calcification (figure 2a) and Coronal CT image (figure 2b) revealed bilateral linear hyperdensities (calcifications) along lenticulostriate arteries on CT Brain.

## Discussion

Minor head trauma can cause acute arterial ischemic stroke in infants and young children. Most of the cases are between 6 months to 18 months of age. Affected infants usually present with facial paresis and hemiparesis soon after the injury and neuroimaging shows small infarcts in the basal ganglia. Minor head trauma can be due to fall from bed, chair, table, stairs, mother's lap, or even from tripping while walking or playing. The mineralizing angiopathy is known to regress over time; hence, infancy may represent an age for increased vulnerability for strokes due to this entity. A detailed history of traumatic events preceding the stroke must be noted. Basal ganglia and internal capsule are the most common anatomical regions affected, reflecting occlusion of lenticulostriate arteries [1-3]. Pathophysiological mechanisms leading to calcification of lenticulostriate arteries are probably of prenatal or early postnatal onset. Squier and Mack [9] proposed that mineralized vessels have defective physiological contractility leading to alteration in their barrier properties leading to the thrombotic event. Lenticulostriate vessels are end arteries. The stresses across the mineralized lenticulostriate arteries during minor trauma might predispose individuals to thrombosis, precipitating stroke [4]. Sagittal and coronal reconstructions images of Computed tomography (CT) scan brain show calcification as linear hyperdensities along the course of the lenticulostriate arteries in the basal ganglia. Thin-sliced multiplanar reconstruction CT is the investigation of choice to pick up the linear calcification of these vessels.

Yang, *et al.* [5] reported basal ganglia calcifications in 10 out of 16 infants with stroke following trivial trauma and identified as the potential risk factor. Similar observations have been made previously [6-8]. Prognosis is generally good with many children achieving complete or nearly complete recovery. The need for antiplatelet agents to prevent recurrence of stroke in this cohort requires further study. The reported case was an infant who developed basal ganglia stroke following trivial trauma with calcified lenticulostriate artery. Her clinical-radiological presentation was consistent with mineralizing angiopathy of lenticulostriate arteries with basal ganglia stroke.

## Conclusion

The report highlights the clinical and neuroradiological presentation of Mineralizing angiopathy of lenticulostriate arteries.

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