

**Clinical Image:****Dense Artery Sign**Ahmad Mursel Anam<sup>1</sup>, Mohammad Mufizul Islam Polash<sup>2</sup>, Raihan Rabbani<sup>3</sup>, Farzana Shumy<sup>4</sup>

In October, 2012, a 52-year-old gentleman with hypertension and diabetes mellitus for long time, presented with sudden onset of inability to talk and move the right side of the body. There was no preceding headache, fever, trauma, or any known provoking factors. Physical

examination had shown raised blood pressure, pulse 92 beats per minute, motor aphasia, and dense right hemiplegia with upper motor neuron signs. A non-enhanced CT-scan of brain, done within thirty minutes of onset of illness, had shown no established features of ischemic or haemorrhagic



**Fig.1:** Non-enhanced CT-scan of brain showing increased density of the left middle cerebral artery (arrow).



**Fig.2** Diffusion weighted MRI of the brain of the same patient confirmed an infarct in the left middle cerebral artery region.

1. Ahmad Mursel Anam, MBBS, Chief Resident, ICU, Square Hospitals Ltd. Dhaka.
2. Mohammad Mufizul Islam Polash, MBBS, Clinical Staff, ICU, Square Hospitals Ltd. Dhaka.
3. Raihan Rabbani, FCPS (Medicine), MD (USA), Associate Consultant, ICU & Internal Medicine, Square Hospitals Ltd. Dhaka.
4. Farzana Shumy, FCPS (Medicine), Medical Officer, Dept. of Internal Medicine, BSM Medical University, Dhaka.

**Corresponding Author :**

Dr. Ahmad Mursel Anam, MBBS  
Chief Resident, ICU, Square Hospitals Ltd. 18/F, Bir Uttam Qazi Nuruzzaman Sarak (West Panthapath), Dhaka 1205, Bangladesh.  
E-mail: murselanam@gmail.com

insult to the brain, but an increased density of the left middle cerebral artery (Fig.1).

Ischemic stroke was suspected from this 'dense artery sign' in the CT. Diffusion weighted MRI of the brain confirmed an infarct in the left middle cerebral artery region (Fig.2). The patient was managed duly and discharged to home with further advice.

Ischemic cerebral infarction cannot usually be diagnosed by computed tomography (CT) within the first 12-24 hours of the event. But increased density along the distribution of a major intracranial vessel (Dense Artery Sign), secondary to

intraluminal clot, may appear shortly after the ictus.<sup>1</sup> Dense Artery Sign is well recognized in cerebral infarction as a result of ischemic stroke due to thrombosis or embolism in a major cerebral artery, and may provide the earliest evidence of ensuing infarction, especially within the first 24 hours.<sup>2</sup> It also indicates poor prognosis.<sup>3</sup> Acute infarcts are visible more frequently on magnetic resonance (MR) images than on CT scans,<sup>4</sup> especially in diffusion weighted magnetic resonance imaging (DW MRI).<sup>5</sup> But in developing countries like Bangladesh where MRI remains costlier and less available, especially in sub-district level, CT remains the investigation of choice in acute strokes. Early recognition of acute cerebral infarction may become more significant as newer therapeutic regimens are being developed.<sup>1</sup> Awareness will enable the clinicians to detect dense artery sign in CT scans when appropriate, and take necessary measures to improve the patient outcome.

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