



Right Vertebral Artery Dissection/Lateral Medullary Syndrome Following Incomplete Sneeze

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Short Communication

There are more than 100,000* strokes in the UK each year.

That is around one stroke every five minutes in the UK.

Between 1990 and 2010 the incidence of strokes fell by almost a quarter.

Around 1 in 6 men will have a stroke in their life.

Around 1 in 5 women will have a stroke in their life.

The rate of first time strokes in people aged 45 and over is expected to increase by 59% in the next 20 years (between now and 2035).

In the same period, it's estimated that the number of stroke survivors aged 45 and over, living in the UK is expected to rise by 123%.

Stroke is one of the most leading cause of death/ major disabilities in UK and worldwide. And dissection as a cause of stroke it is not among the most common causes of stroke. And causes of triggers of arteries dissection usually involves trauma or we report a case of 45 years old Caucasian female with no significant past medical history.

Not on any regular medications (except OCP), none smoker, she has 2 children both normal pregnancy/deliveries 20+ years ago, no recent travel abroad. Patient reported no symptoms preceding the onset (no Headache, no flue related symptoms, no neck pain) no recent trauma or head injury.

Patient was setting at home watching TV, when she had the urge to sneeze but held it back. Almost immediately pain noticed in the back of the neck on the left side associated with nausea and vomiting, patient tried to stand and go to the bathroom as she was very sick and started to vomit and had a very unsteady gait ataxic gait (described by the husband and the patient as being/feeling Drunk).

Patient also complained of double vision, her family Reported that "the patient's eyes are Wobbly."

Patient was brought in by Emergency Service to a tertiary stroke centre and reviewed by the



Figure 1: Admission CT angiograms intracranial demonstrate lack of flow on the left vertebral artery.

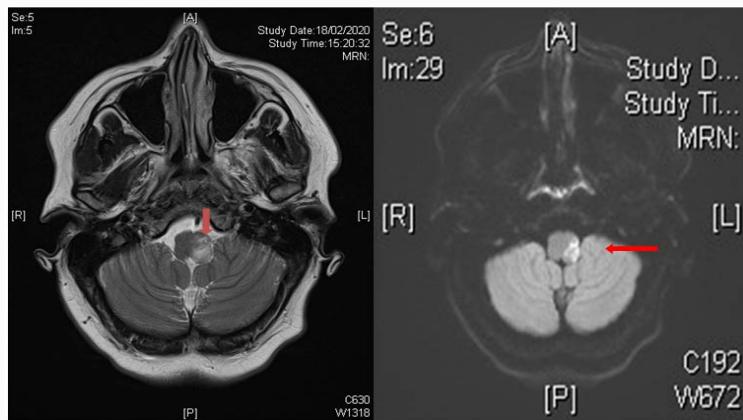


Figure 2: MRI Brain was done and Showed left lateral aspect of the medulla oblongata due to an acute infarction.



Figure 3: CT angiogram was repeated 15 weeks after initial Presentation. Severely narrowed caliber of left vertebral artery with no significant interim change-most likely occluded due to thrombus or dissection, probably background of hypo plastic artery.

stroke Team within 90 min of symptoms onset.

Finding on examination by the stroke Team:

1. Unwell Looking female, holding the sickness bowl actively vomitting despite IV antiemetic given by emergency service crew.

2. Alert GCS 15/15. BP 140/80, Heart 95/min, Temp 36.9, RR20/min, Sat 98% RA.

3. Her systemic examination, including cardiovascular, respiratory, abdomen, skin and mucosa of lower limbs didn't show any clear abnormality.

Neurological examination

- Ptosis on the left with vertical/horizontal Nystagmus looking on all direction.
- Left side facial weakness.
- Right side upper and lower limbs sensory deficit.
- Left upper and lower limbs mild weakness power MRC 4/5 and in coordination.
- Impaired swallowing (Dysphagia to fluid and solid).

NIHSS=8

CT brain: No obvious intrinsic abnormality in brain parenchyma. No obvious infarct or Hemorrhage.

CT intra-cranial angiogram: probable low flow and contrast on the left vertebral artery. But dissection/thrombus can't fully be ruled out needs interval scan.

On admission observations

BP 151/80, HR 95/min. Temp 36.8. RR 20/min. Sat 98% RA.

Blood test showed Normal FBC, U&E, CRP: NAD.

As Within thrombolysis (4.5 h IVT) window patient has been consented, and rtPA was started.

No immediate complications, 2 h as well as 24 h NIHSS improved.

8→4 after thrombolysis. Next day CT brain was repeated and was reported as NAD. Patient was started on high dose aspirin.

Patient was consequently discharged home 13 days after admission on 75 mg clopidogrel, amlodipine 5 mg to control blood pressure, stating for lowering cholesterol level.

Neurological deficit on discharge: Mild weakness of the left upper and lower limb power 4 ± 5, mild left facial weakness, and right side sensation alteration.

Diagnosis: Lateral Medullary syndrome

Thrombophilia and vasculitis screen NAD, HbA1c less than 40 mmol/ml.

Echocardiogram was reported as Mild Tricuspid regurgitation.

Five days ambulatory ECG monitoring was sinus rhythm throughout.

She was reviewed in the Follow up stroke clinic in April 2020 and she had this mild weakness on the left side however she reported worsening of the sensory abnormality on the right side (loss of temperature as well as pain sensation on the right side of the body) patient had a repeat MR brain and cervical Spine:

It showed only the established medullary infarct. And few degenerative intervertebral discs changes.

Severely narrowed caliber of left vertebral artery with no significant interim change - most likely occluded due to thrombus or dissection, probably background of hypo plastic artery.

Discussion

Vertebral artery Dissection is not among the Leading causes/ etiology of stroke with an annual incidence as following: of spontaneous vertebral artery dissection is 1 to 1.5 per 100,000. Traumatic dissection occurs in approximately 1% of all patients.

Vertebral artery dissection has been usually reported secondary to blunt trauma to the neck also was reported due to hyperflexion/ hyperextension of the neck.

The dissection can lead to formation of intimal flap which reduces blood flow and can cause a formation of thrombus and subsequently infarction to the posterior circulation territories mainly brain stem and cerebellum.

Lateral Medullary syndrome resulting from vertebral artery dissection is a very important differential diagnosis to be considered in young patients presenting with sudden onset neurological deficit related to cerebellum/brain stem following any form of neck trauma.

Usually patient has sensory deficits that affect the trunk and extremities contra-laterally to the site of the lesion.

Sensory deficits of the face and cranial nerves ipsilateral to the site of the lesion.

(The sensory deficit mainly is loss of pain and temperature sensation) weaknesses of the extremities' have been reported, as well as ocular findings such as Nystagmus and ptosis.

Dysphagia, dysarthria, ataxia as well have been reported.

MRA/CTA is the diagnostic tool to confirm the dissection as well as the Infarction.

Treatment with anti-platelets is recommended to reduce the risk of progression of the thrombus formation.

We also need to look at other Risk that may be present which could have exacerbated the condition (hypertension, Hypercholesterolemia, very rarely collagen disorder).