Case Summary

Mr Law
50 y.o gentleman, works as film director
Good past health, ADL-I; lives with family

No family history of neurological disease
Chronic smoker (20 cigarettes/ day) and social drinker

Presented with sudden onset of right side weakness and numbness while film shooting
The extent of weakness made him fall onto the ground with his body, and was unable to stand up immediately
Associated with emotional swing
No loss of consciousness
No witnessed convulsion
No head injury
No headache / vertigo / vomiting / chest pain
No slurring of speech
Symptoms lasted for 5 mins and spontaneously resolved

No formal medical checkup was done after the event
< This event was compatible with transient ischaemic attack (TIA) >

3 days later, Mr. Law had mild dizziness and lightheadiness after waking up, and vomited once.
< The symptom was likely associated with high blood pressure >
Another episode of sudden onset of right side weakness again, with dense numbness while film shooting (time: 1600)
Severe headache and vomiting +
Estimated GCS on site: E4V2M5
Gaze deviated to left side
Right face drooling of saliva
Initially right upper/ lower limbs power ~ 3/5, manage to stand for few seconds and fell again
became densely right hemiplegic
Associated with language problem (mixed receptive and expressive aphasia), headache
Dense numbness
Visual and sensory neglect to right side +

Brought to an acute care hospital with hyperacute stroke team service
Triage to Category II after AED (Accident and Emergency Department) triage, as the provisional diagnosis is acute stroke (time: 1630)
Stroke nurse and neurologist were informed and came to AED immediately
Urgent CT brain was performed: showed a dense left MCA +. No early infarct was seen. Minimal left sulcal effacement in the left parietal lobe. No hemorrhage

AED Assessment (time: 1645)
BP 150/70, BW 70kg, H'stix 12.0mmol/L
E4V1M5
Global aphasia +
Gaze deviated to left side
Right CN VII UMN palsy
Right UL power 0/5, Right LL power 0/5
Left side power 5/5
Severe visual and sensory neglect to right side
NIHSS 24

After the assessment by stroke neurologist Dr. R Li, he explained the diagnosis of acute Left MCA infarct to Mrs. Law.
Indication of intravenous thrombolysis by rTPA (recombinant tissue plasminogen activator), and bleeding risk of the treatment were also explained. She consented for the rTPA treatment.

rTPA 54mg (0.9mg/kg as total dose, 5.4mg as loading + 48.6mg as infusion over 1 hr) was started at 1700
Onset to needle time: 1 hour, Door to needle time: 30 min
BP was stable, SBP < 160mmHg during the infusion.
Patient has early neurological recovery after the infusion, with GCS improved from E4V1M5 to E4V4M5; gaze still preference to left side, but not forced deviation
Right UL power improved to 3+/5, Right LL power to 4/5

Follow-up CT brain performed 24hours later: dense left MCA sign was resolved. Early infarct was shown over the left high parietal lobe. No hemorrhagic transformation

Workup of stroke risk factors:
Fasting glucose 11.2mmol/L, HbA1c 9.0% - suggestive of diabetes
Fasting lipid profile: Total cholesterol 7.2mmol/L, LDL 5.8mmol/L – suggestive of hyperlipidemia
Blood pressure – keep between 150-160mmHg after acute phase of stroke
ECG (repeated) – Sinus rhythm, LVH +
Carotid duplex – Moderate disease was noted in bilateral carotid system. Calcified plaques were seen in bifurcation and prox internal carotid arteries. Bilateral vertebral arteries were seen and in antegrade flow.

CT cerebral angiogram – 50% stenosis was noted over the left MCA M1. No hemodynamic significant extracranial carotid arteries stenosis.

Diagnosis: **CVA** – left partial anterior circulatory infarct (**Lt PACI**), secondary to intracranial large artery stenosis. Underlying DM, HT, hyperlipidemia
Treatment: Aspirin 80mg daily, metformin 500mg bd, lisinopril 10mg daily, and atorvastatin 20mg daily

Multidisciplinary Rehabilitation

Medical: Treatment as above. Mr. Law received a course of in-patient multidisciplinary stroke rehabilitation, and eventually discharged 21 days after admission.

Nursing:
On admission, National Institutes of Health Stroke Scale (NIHSS) and Glasgow Coma Scale (GCS) were used in the initial neurological assessment of the patient.
Initial urinary incontinence and need diapers. Feeding needed assistance. Noted depressive mood and decrease voluntary speech.
Intravenous rTPA was administered as prescribed for Mr Law's acute Left MCA infarct. GCS was then performed together with taking the vital signs every hour to evaluate the patient's progress.
Mood improved with better adjustment and rehabilitation progress. Regular nursing care to stroke patient with right hemiparesis. Eventually continent, and was able to manage grooming, dressing, feeding and toileting himself.

Physiotherapy: Progressive mobilizing and strengthening exercises improved right upper and lower limb strength. Functional training started to improve standing and walking balance, and walking capability. Gradual improvement shown and the patient could walk with the walking aids (e.g. quadripod) under supervision.

Occupational Therapy: Training of right upper limbs power. Initial right UL f(x) score 4/7. Limited ROM of right shoulder/ elbow/ hip. Lower garment dressing need total assistance. Noted gradual improvement in ROM of right UL, f(x) score improved to 6/7. Mini Mental State examination 23/30 at initial interview. Disorientation to place and time noted. MMSE 29/30 at two weeks post injury. Anxiety and delirium noted.

Speech Therapy (Not in film): Mixed dysphasia, and swallowing need 3 tsp of thickener for fluid initially. Later patient tolerated shredded diet. Speech later improved, esp receptive. Mild expressive dysphasia (e.g. nominal) after rehabilitation

Optometry: Right homonymous hemianopia noted by confrontation, and confirmed with computerized visual field perimetry. Vision rehabilitation was completed, which included prism prescription to increase the peripheral field awareness and appropriate visual training to improve the gaze preference and awareness of the hemianopia.

Post-discharge
Mr. Law also received out-patient multidisciplinary stroke rehabilitation and resumed his duty as film director 6 months after stroke. He quit smoking, with good diabetes and blood pressure control. No recurrent TIA/ CVA event afterward.

Medical laboratory Science: Fasting glucose, HbA1c and fasting lipid profile need to be tested every 6 months to monitor patient's diabetes and hyperlipidemia.