

Supplementary File 1
Drama for standardized patients

Case 1: Standard patient of acute ischemic stroke

Name: Zhang san

Age: 58yr

Gender: male

Profession: worker

Race: Han

Education: High school

Time to ER: 2019-11-26 8:30am

Chief complain: sudden weakness of the right limbs with speechless for 2 hours.

Present history: After getting up at 6:00am, the patient said he felt dizzy with a moderate headache and needed to use the bathroom. Then his wife found him lying on the floor of the bathroom 2 hours ago (6:30). He was sent to the hospital immediately by an ambulance. He kept alert and could follow the orders but could not speak meaningful words since onset. In addition, he cannot move his right body at all. There was no vomiting, seizures, incontinence and unconsciousness since onset. No chest, back or abdominal pain was noticed.

Past history: He has hypertension for 3 years without treatment. He denied cardiac diseases, diabetes and other diseases. He also denied any surgeries and trauma during recent 3 months. No history of infectious diseases. A heavy smoker during the past 3 decades. No drinking. No history of allergic to any drugs or foods.

Personal history: married, 1 kid, working in a cigarette factory.

Family history: mother alive with hypertension; father died of cerebral hemorrhage.

Physical examination:

HR 88bpm, BP 166/100mmHg, T 37, SaO2 98%

Alert, be able to follow orders, normal frown, closing eyes, deviated mouth to the left when showing the teeth, the tongue to the right, broken language, muscle strength of the right limbs of Grade 2 and normal with the left limbs, muscle tension of the right limbs slight declined.

	Tendon reflex (upper limbs)	Tendon reflex (lower limbs)	Hoffmann's sign	Rosolimo's sign	Barbinski's sign	Chadoc k's sign	Sensation
Right	++++	++++	+	+	+	+	weak
Left	++	++	-	-	-	-	normal

Meningeal irritation sign:--

Ataxia: --

Checklist of evaluation

History taking (15)	Score	Comment
Time since onset: 2.5h (1)		
Symptoms (9)		
Alert (1)		
Speechless (1)		
Paralysis of The Right Body (1)		
Vomit (1)		
Seizure (1)		
Unconsciousness (1)		
Chest/Abdominal Pain (1)		
Back Pain (1)		
Sweating (1)		
Past History		
Surgery (1)		
Trauma (1)		
Drugs (1)		
Hypertension (1)		
Diabetes (1)		
Physical Examination (16)		
Giving Orders (1)		
Pupils (1)		
Eyeballs (1)		
Eye Field (1)		
Mouth (1)		
Tongue (1)		
Aphasia (1)		
Muscle Strength (Upper) (1)		
Muscle Strength (Lower) (1)		
Pathological Signs (Upper) (1)		
Pathological Signs (Lower) (1)		
Sensation (1)		
Ataxia (1)		
Meningeal Irritation Signs (1)		
Ignorance (1)		
NIHSS (1)		
Time to complete the procedure above (5)		
Treatment for the first step (14)		
Call a neurologist (1)		
Call nurses (1)		
Start the green way (1)		
BP (1)		
MBG (1)		

ECG (1)		
Establish an intravenous pathway (1)		
CT scan (1)		
Blood test: blood type (1), STD (1), routine (1), coagulation (1), biochemistry (1), cardiac infarction (1)		

Case 2 Acute Myelitis

Name: Chen De

Age: 47yr

Gender: male

Profession: engineer

Race: Han

Education: bachelor

Time to ER: 2016-11-26 15:30am

Chief complain: back pain for 1 week, sudden fever for 1 day and bilateral weakness of the lower limbs for 2 hours.

Present history: One week ago, he felt a progressive pain in the back and he took massage and acupuncture to alleviate the pain, which remained. One day ago, he caught a sudden fever of 39.5C with a slight drowsiness. He took anti-fever medicine but it didn't work. 2 hours ago, he found his legs are numb and weak, with a difficulty in peeing. He was then sent to hospital by an ambulance. There was no headache, vomiting, cough and unconsciousness since onset. The bilateral upper limbs move well. No chest, back or abdominal pain was noticed. No tight breath and swallow disorder were reported.

Past history: He was generally healthy in the past. He denied cardiac diseases, diabetes and other diseases. He also denied any surgeries and trauma during recent 3 months. No history of infectious or endocrine diseases or tumor. No history of contacting drugs and toxins. No drinking. No history of allergic to any drugs or foods.

Personal history: Married, no kid, working in an aboard business company and returned to China this week.

Family history: mother alive with hypertension; father died of unknown reasons.

Physical examination:

HR 110bpm, BP 128/78mmHg, T 39, SaO2 97%

alert, be able to follow orders, normal frown, closing eyes and showing teeth. The muscle strength was Grade 1 for lower limbs, and Grade 5 for the upper limbs. muscle tension generally declined for the lower limbs.

	Tendon reflex (upper limbs)	Tendon reflex (lower limbs)	Hoffmann's sign	Rosolimo's sign	Barbinski's sign	Chaddock's sign	Sensation (upper limbs)	Sensation (lower limbs)
Right	++	+++	-	-	+	+	normal	numb
Left	++	+++	-	-	+	+	normal	numb

Meningeal irritation sign: +

Ataxia: --

Checklist of evaluation

History taking (17)	Score	Comment
Time since onset: 1 week (1)		
Symptoms (11)		
Back pain (1)		
Consistent (1)		
History of previous medical intervention (1)		
Effect of medical intervention (1)		
Sudden deterioration (1)		
Severe fever (1)		
Sudden paralysis in the legs (1)		
Numb in the legs (1)		
Difficulty in peeing (1)		
Negative symptoms (2)		
No chest, back or abdominal pain		
No tight breath and swallow disorder		
Past history (5)		
Surgery (1)		
Trauma (1)		
Hypertension (1)		
Infectious diseases (1)		
Tumor (1)		
Physical examination (16)		
Giving orders (1)		
Pupils (1)		
Eyeballs (1)		
Eye field (1)		
Mouth (1)		
Tongue (1)		
Speech (1)		
Muscle strength (upper) (1)		
Muscle strength (lower) (1)		
Pathological signs(upper) (1)		
Pathological signs(lower) (1)		
Sensation (2)		
Tendon reflex (1)		
Meningeal irritation signs (1)		
Hitting Pain along the spinal cord (1)		
Treatment for the first step (12)		
Blood gas analysis (1)		
ECG (1)		
Urine catheterization (1)		
Bilateral BP (1)		

MR (1)		
Lumbar puncture (1)		
Blood test: blood type (1), STD (1), infectious biomarkers (1), coagulation (1), biochemistry (1), CSF tests (1)		

Case 3 Myasthenia Gravis

Name: Li Wu

Age: 23yr

Gender: Female

Profession: officer

Race: Han

Education: bachelor

Time to ER: 2019-11-26 8:30am

Chief complain: progressive weakness for 3 months, deteriorated for 2 days

Present history: 3 months ago, she felt general weakness, especially after exercise. The weakness is subtle in the morning but obvious at night. She chose to ignore the weakness even it progresses. One week ago, she caught a cold and recovered after taking some anti-virus medicine. However, the weakness deteriorated suddenly two days ago and she even couldn't walk and swallow. There is a tightness around her chest since this morning, along with moderate headache. There was no fever, vomiting, cough, incontinence and unconsciousness since onset. No chest, back or abdominal pain was noticed.

Past history: She was generally healthy in the past. She denied cardiac diseases, diabetes and other diseases. She also denied any surgeries and trauma during recent 3 months. No history of infectious or endocrine diseases or tumor. No history of contacting drugs and toxins. No drinking. No history of allergic to any drugs or foods.

Personal history: unmarried, no kid, working in a business company.

Family history: mother alive with hypertension; father died of cerebral hemorrhage.

Physical examination:

HR 120bpm, BP 156/88mmHg, T 37, SaO2 93%

alert, be able to follow orders, normal frown, closing eyes and showing teeth. The muscle strength was Grade 3 for all limbs, and muscle tension generally declined.

	Tendon reflex (upper limbs)	Tendon reflex (lower limbs)	Hoffmann's sign	Rosolimo's sign	Barbinski's sign	Chaddock's sign	Sensation
Right	+	+	-	-	-	-	normal
Left	+	+	-	-	-	-	normal

Meningeal irritation sign: --

Ataxia: --

Checklist for evaluation

History taking (18)	Score	Comment
Time since onset: 3 months (1)		
Symptoms (11)		
General weakness (1)		
progressive (1)		
Associated with exercise (1)		
Fluctuated during a day (1)		
Deteriorated after a cold (1)		
The extent of weakness at present (2)		
Cannot walk		
Difficulty in swallowing		
Short of breath (1)		
Headache (1)		
Negative symptoms: chest pain, cough, fever... (2)		
past history (6)		
Endocrine diseases (1)		
Tumor (1)		
Drugs or toxins exposure (1)		
Infectious diseases (1)		
Cardiac diseases (1)		
Family resemblance cases (1)		
Physical examination (16)		
Giving orders (1)		
Pupils (1)		
Eyeballs (1)		
Eye field (1)		
Eye lids (1)		
Muscle strength (upper) (1)		
Muscle strength (lower) (1)		
Pathological signs(upper) (1)		
Pathological signs(lower) (1)		
Sensation (1)		
Ataxia (1)		
Meningeal irritation signs (1)		
Treatment for the first step (14)		
Call a neurologist (1)		
Call nurses (1)		
Blood gas analysis (1)		
Life sign monitoring and support when necessary (1)		
ECG (1)		

Establish an intravenous pathway (1)		
EMG (1)		
Neostigmine test (1)		
Chest CT scan with enhancement (1)		
Blood tests: infectious biomarkers (1), thyroid function (1), creatase (1), AchR antibody (1), myocardiac biomarker (1)		