



Case 3 : all happened in the kitchen

Learning issues :

- Anatomy of the cerebral hemisphere and its blood supply .
- Functions of the different parts of the cerebral hemisphere .
- Speech area and mechanisms used for speech .
- Differences between upper and lower motor neuron lesions .
- Risk factors for cerebral infarction .
- To interpret the patients' symptoms and signs .
- Discuss the pathology of cerebral infarction .

Key information & presenting problem ..

- Muneera, 58-year-old female .
- Half an hour ago, she is found on the floor .
- Unable to talk or walk .
- Unable to move her right arm .

Metformin: allows the body to make better use of the lower amount of insulin which occurs in type 2 diabetes

History ..

- She has uncontrolled hypertension & diabetes with high blood cholesterol .
- 4-5 months ago, numbness of her right arm & leg .
- She became unable to move her right arm & leg .
- Headache from time to time .
- When she's angry, she became unable to remove her right arm .
- Medication : 1- metformin & glibenclamide → type 2 diabetes
2- lisinopril → hypertension
3- atorvastatin → cholesterol
4- low dose aspirin → prevent heart problems
- No allergy or smoking .

Glibenclamide works by increasing the amount of insulin.

Clinical examination

- BMI = 33 → obese .
- Vital signs : ↑ blood pressure , ↑ heart rate, ↑ respiratory rate.
- CNS examination :

	Right side	Left side
Cranial nerves	7 th cranial nerve : weakness of lower part, normal upper part.	Normal
Motor power	Upper limb : <ul style="list-style-type: none">- Unable to remove her arm .- Increased muscle tone of her arm .- Hyper reflexia of biceps, triceps & brachioradialis. Lower limb : <ul style="list-style-type: none">- Unable to flex her knee or raise her leg up straight.- Increased muscle tone of her leg.- hyper reflexia of knee & ankle reflexes.- Planter reflex is dorsiflexion.	Normal
Sensory sensations	Loss of pain and temperature of upper & lower limb.	Normal

- Cardiovascular examination : carotid auscultation → a bruit over left carotid artery .
- Respirator & abdominal examination : normal

Investigation

- Brain CT-scan (2-3 hours after illness) : minimal changes in the left frontal lobe (need urgent MRI).
- Brain MRI (4 hours after illness): extensive changes in the left middle cerebral artery territory .
- Perfusion weighted images (PWI) : reduced cerebral blood flow in the left middle cerebral artery .
- Full blood examination : haemoglobin, PCV, white blood cells & platelet count → normal .
- Blood biochemistry : serum level of Na, K, Ca, blood urea & creatinine level → normal.. BUT fasting blood glucose → very high.
- ECG : evidence of left ventricular hypertrophy.
- Carotid duplex doppler : reveals high grade internal carotid stenosis on the left side .

Diagnosis :

Stroke leads to cerebral infarction

Carotid duplex doppler : is a type of vascular ultrasound study done to assess the blood flow of the arteries that supply blood from the heart through the neck to the brain.

Perfusion weighted images (PWI) : diagnostic tests that use radiofrequency energy, magnetic fields, and computer software to create detailed, cross-sectional images of the brain to show blood flow through the blood vessels of the brain

Management

- Medications :
 1. Ca channel antagonist (amlodipine): for high blood pressure .
 2. Simvastatin : cholesterol lowering agent
 3. Glibenclamide : an oral hypoglycaemic agent
 4. Continued on a low dose aspirin
- Rehabilitation : team of physiotherapy, speech pathology & occupational therapy .
- Surgical therapy (after improvement) : left carotid endarterectomy (to remove the plaque in carotid) .

Prognosis

- She showed improvement .. She is able to move right arm, speak phr & to wake with assistance ..
- Her blood pressure, blood sugar, blood lipid are within normal range.
- She lost 7 kilos..

Questions

1- What are munera presenting problems ?

She is unable to talk + walk + move her right arm.

3- When we took munera's history, she had a problem in moving her right arm and she recovered after 5 minutes , explain this ?

She had what we call it mini stroke or "TIA" =Transient Ischemic Attack

5- What are the risk factors that munera's had?

1- diabetes mellitus 2-hypertention
3-high blood cholesterol 4- obesity

**2- What is the final diagnose?
Munera had a thrombus stroke**

Munera had a thrombus stroke

4- which speech center is affected ?

Baroca's because she can understand spoken word

6- Why the doctor ask munera to look at him and raise her left arm?

To test her if she recognize the orders and understand the spoken word, also to test higher centers for speech.

7- Did she had UMNL or LMNL ?

She had UMNL referred by the results of the examination

8- Which lobe is effected and which artery?

Frontal lobe (where baroca's area) + and left middle cerebral artery.

9- What investigation you need to preform to conform your diagnose?

Brain c.t scan, blood test , brain MRI and perfusion weighted imaging.

10- The formation of thrombus occur by which mechanism?

atherosclerosis

11- What is your management options?

- 1- decrease high blood pressure (amolodipine) ca channel blocker.
- 2-decrease cholesterol (simvastatin)
- 3- oral hypoglycemic agent (glibenclamide)
- 4- low dose asprin .

12- What should we do about the stenosis (Bruit) ?

Endarterectomy to remove it



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