

lacunar syndromes
[created by Paul Young 02/10/07]

definition

- lacunar syndromes are stroke syndromes associated with chronic hypertension involving infarction in territories of deep penetrating arteries
- the five classical lacunar syndromes are:
 1. Pure motor stroke/hemiparesis (33-50%)
 2. Ataxic hemiparesis (2nd most common)
 3. Dysarthria/clumsy hand
 4. Pure sensory stroke
 5. Mixed sensorimotor stroke

aetiology

- The cause of lacunar infarction is occlusion of a single small penetrating artery. This occlusion may be due to microatheroma and lipohyalinosis, which are associated with hypertension, smoking, and diabetes, or to microembolism from the heart or carotid arteries

symptoms

- lacunar syndromes are characterised by an absence of cortical signs such as neglect, visual field deficits or aphasia
- Symptoms may occur suddenly or may evolve in either a fluctuating (eg, the capsular warning syndrome) or a progressive manner.
 1. Pure motor stroke
 - consists of hemiparesis or hemiplegia that typically affects the face, arm, and leg equally; however, the face or leg can be involved to a lesser extent than other regions, and occasionally only arm or leg weakness is noted.
 - transient sensory symptoms (but not signs) may be present.
 - dysarthria and dysphagia also may be present.
 2. Ataxic hemiparesis
 - weakness and clumsiness on one side of the body
 - usually affects the leg more than the arm
 - the onset of symptoms is often over hours or days.
 3. dysarthria/ clumsy hand
 - main symptoms are dysarthria and clumsiness of hand which is most prominent when patient is writing
 4. pure sensory stroke
 - main symptoms are tingling, numbness or occasionally pain on one side of the body
 5. mixed sensorimotor stroke
 - hemiparesis of hemiplegia with sensory abnormality on the same side

signs

1. Pure motor stroke/hemiparesis:
Hemiparesis or hemiplegia is noted with hyperreflexia and Babinski sign, but no involvement of any other system is observed
2. Ataxic hemiparesis:
A combination of pyramidal signs (eg, hemiparesis, hyperreflexia, Babinski sign) and cerebellar ataxia on the same side of the body often involves the leg more severely than other parts of the body. Nystagmus may be present.
3. Dysarthria-clumsy hand
 - Unilateral lower facial weakness with dysarthric speech is noted. On protrusion, the tongue may deviate to the side of facial weakness. A mild ipsilateral hemiparesis usually is noted, but the arm is ataxic. Ipsilateral hyperreflexia and Babinski sign may be observed.
4. Pure sensory stroke
 - Unilateral sensory loss is observed. Although the patient may complain of weakness, no weakness is found on examination.
5. sensorimotor stroke
 - A combination of pyramidal signs (eg, hemiparesis, hyperreflexia, Babinski sign) and sensory signs without cortical signs

investigation

- CT scan is appropriate initial investigation; may require MRI
1. pure motor stroke
 - the lacune is usually in the posterior limb of the internal capsule or the basis pontis
 2. Ataxic hemiparesis & 3. dysarthria / clumsy hand
 - The most frequent sites of infarction are the posterior limb of the internal capsule, basis pontis, and corona radiata.
 4. pure sensory stroke
 - lesion is usually in the thalamus
 5. mixed sensorimotor stroke
 - The infarct is usually in the thalamus and adjacent posterior internal capsule (seemingly, in both the carotid and vertebrobasilar territories).
- other investigations include:
- immediated blood glucose to rule out hypoglycaemia
 - coags & FBC

treatment

- Consider TPA
- contraindications include
 - 1) Beyond 3 h of stroke onset (or when last well)
 - 2) CT scan evidence of recent major infarction
 - 3) Concomitant anticoagulation (with prolonged aPTT or PT greater than 15 s or INR greater than 1.7)
 - 4) Platelet count <100,000/mm³
 - 5) Documented hypersensitivity;
 - 6) another stroke or major head injury in last 3 mo;
 - 7) major surgery in last 14 d;
 - 8) pretreatment systolic BP >185 mm Hg or diastolic BP >110 mm Hg
 - 9) rapidly improving signs
 - 10) mild deficit
 - 11) prior intracerebral hemorrhage
 - 12) seizure at onset of stroke
 - 13) gastrointestinal or urinary bleeding in last 21 d
 - 14) recent myocardial infarction

commence on aspirin & statin
treat risk factors