CASE STUDY OF A PATIENT WITH STROKE WHO UNDERWENT REHABILITATION IN A COMMUNITY HOSPITAL

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Mr LH was admitted to SGH Neurology on 3 May 2002 for new onset of right hemiparesis. He has a past history of :

1. An old stroke with scar epilepsy and cognitive impairment. Treatment: Asprin 100mg om and Phentoin 300mg on
2. Ischaemic heart disease. No active angina. No history of angioplasty. Treatment: only on Trimetazidine 20mg tds
3. Hypertension. Not on any medication now
4. Asymptomatic gallstones.

Premorbidly, Mr LH was ambulating with a walking frame by himself and was able to perform his activities of daily living (ADL) by himself. However, he was mainly homebound. He retired 25 years ago and previously worked as a toy-seller in a HDB shop. He was having frequent falls at home before his stroke.

During his admission to SGH, Mr LH had a CT head done which showed moderate cerebral atrophy, old left middle cerebral artery territory infarct and new lacunar infarcts in the right external capsule. He also had a dementia workup done which included a thyroid function test, VDRL and B12/Folate which were all normal. He was continued on asprin. When assessed by the therapists in SGH, he was ambulating with the walking frame with moderate assistance and required moderate assistance when standing up from a sitting position. He was also found to be dysphagic by the Speech Therapist and required nasgogastric feeding. Patient had become unable to follow commands, inconsistent in his attention and poorly communicative.

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Mr LH was transferred to AMKH for rehabilitation on 13 May 2002. His main physical findings were:

Afebrile	: HR 60, RR 16, BP 130/80 (supine)
Vision	: Bilateral cataracts (family not keen on operation)
Hearing	: Slightly decreased bilaterally
Heart	: S1, S2, no murmur
Lungs	: Clear
Abdomen	: Soft, liver, spleen, kidneys and bladder, Bladder not palpable, BS active
Neurological	
Exam	: Alert
Cognition	: Uncooperative in assessment. Assessed as poor
Feeding	: on NG 1000ml Ensure a day
Speech	: Dysarthric
Mood	: Appeared euthymic
Power	: Uncooperative in assessment. At least 3/5 in all four limbs
Sensation	: Can't assess
Reflexes	: Uncooperative
Calves	: Supple

Investigations:

FBC	: Hb 13.5 g/dl, TW 6.37 X10(9)/l, Plt 320 X10(9)/l
PT/PTT(sec)	: normal
U/E/Cr (mmol/l)	: Ur 4.2, Na 139, K 3.8, Cl 103, HCO3 25.2, Cr 69
Ca/Phosphate	: normal
LFT	: T Prot 74 g/l, Alb 35 g/l, Bil 10 umol/l, ALP 112 u/l, AST 37u/l, ALT 33 u/l
Fasting Blood Glucose (mmol/l)	: 4.9
Fasting Lipids (mmol/l)	: Total Cholesterol (TC) 5.75, HDL 1.40, TG 1.35, LDL 3.75, TC/HDL Ratio 4.11 –

Patient was started on simvastatin 10mg on for his raised LDL (Target LDL: 2.6)
Thyroid Function Test : Free T4 18.1 pmol/l, TSH 1.75 mU/l
VDRL non-reactive
B12 : 256 pmol/l, Folate: 11 nmol/l

During his stay in AMKH, Mr LH was found to be demented and uncooperative in rehabilitation. He kept pulling out his NG tube and needed mittens to prevent this. He was also agitated at night and kept calling out. When discussed with his family members, Mr LH has been behaving abnormally before his current stroke and has worsened after the latest stroke. Patient was started on Risperidone 0.5mg on and his behaviour and sleep improved.

Our speech therapist assessed Mr LH to have pharyngeal dysphagia and was carefully weaned off his NG tube to blended diet and eventually thin fluids. This was a great relief to the family as Mr LH did not require NG feeding anymore and therefore did not require mitten or restraints. Moreover, it is cheaper for family members who do not need to buy special feeds.

About 4 weeks after admission, Mr LH had a generalized, tonic-clonic seizure in the ward which lasted 10 minutes and spontaneously resolved. He recovered fully within half an hour. Investigations like urea and electrolytes excluded correctable causes for his seizure and a serum phenytoin level was below therapeutic range. His phenytoin dose was increased from 200mg to 300mg on and he has had no seizure since.

Mr LH was limited in his rehabilitation by his dementia and was only able to ambulate without aids with minimal assistance. He still required moderate assistance in activities of daily living.

Given Mr LH's current functional status after a month of active rehabilitation, Mr LH's family felt that they could not look after their father anymore given their limited social circumstances and resources. They were not able to afford a maid to look after their father and a decision was made to place Mr LH in a voluntary nursing home.

Learning Points:

1. Active geriatric rehabilitation does not make a patient independent in most cases, but any improvements in functioning make it easier for carers to care for the patient.
2. Successful rehabilitation depends largely on intact cognition, especially in the elderly as rehabilitation benefits from patient's cooperation and ability to comprehend instructions.
3. Rehabilitation not only includes physiotherapy and occupation therapy, but also speech therapy. Many stroke patients recover their swallowing abilities after a few weeks and they should be reviewed so that NG feeding can be stopped.
4. Mr LH probably has multi-infarct dementia because of his history of strokes, CT brain findings and unremarkable dementia work-up. The treatment of multi-infarct dementia is the same as in the prevention of strokes i.e. treatment of correctable risk factors like diabetes, hypertension and hyperlipidaemia.
5. Mr LH was falling frequently at home before his latest stroke, which probably meant he was not safe to ambulate by himself before his stroke. Possible causes

for his new onset of frequent falls could be that he may have had new undiagnosed strokes or worsening cognition impairing his safety awareness.

6. Even when a patient who is a known case of scar epilepsy has a seizure, it is important to exclude correctable causes for breakthrough seizures, confirm compliance to anti-epileptics, concurrent drugs which may interact and reduce serum drug levels and check on serum anti-epileptic levels.
7. Institutionalisation of the elderly in nursing homes is often the result of the family becoming unable to cope with an elderly's disability and this stresses the importance of home help services.

Questions

1. The treatment of multi-infarct dementia includes:
   a. Control of correctable risk factors like diabetes, hypertension and hyperlipipdaemia
   b. Carer education
   c. Environmental manipulation to increase patient safety especially if safety awareness is poor.
   d. Anti-cholinesterases which have been proved to be effective in the reversal of multi-infarct dementia.
   e. Asprin which may be useful to prevent progression of further strokes.

2. The role of the Speech Therapist in the geriatric rehabilitation team includes assessment and rehabilitation of the following except:
   a. swallowing
   b. speech
   c. communication techniques if aphasic
   d. simple oral hygiene
   e. limb muscle weakness.

3. Possible correctable causes for cognitive impairment in the elderly include:
   a. B12 deficiency
   b. Neurosyphilis
   c. Hypothyroidism
   d. Hyperthyroidism
   e. Metastatic brain secondaries.