

# MASQUERADE OF FALLS AND DEPRESSION, AND TRANSITIONS OF CARE

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## ABSTRACT

**Falls in an elderly require a comprehensive bio-psycho-social approach to evaluate for the root causes. These may be multi-factorial, and we need to deal with most of them, if not all, in order to effectively reduce the risk for falls.**

**Frailty is a marker of poor functional outcomes. Sarcopenia is a major modifiable risk factor for frailty. There are various community programmes providing a comprehensive range of services to keep the elderly physically, mentally, and socially active.**

**Communication with primary care physicians is important to ensure smooth transition back into the community, optimal management of chronic diseases and minimal re-admission.**

**Keywords: Falls; Frailty; Community Resources; Bio-psycho-social Approach;**

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## INTRODUCTION

Falls in an elderly require a comprehensive bio-psycho-social approach to evaluate for the root causes. These may be multi-factorial and we need to deal with most of them, if not all, in order to effectively reduce the risk for falls. Frailty is a marker of poor functional outcomes. Sarcopenia is a major modifiable risk factor for frailty. There are various community resources providing a comprehensive range of services to keep the elderly physically, mentally and socially active. Communication with primary care physicians is important to ensure smooth transition back into the community, optimal management of chronic diseases and minimal re-admission. This case highlights the role of a Family Physician in coordinating the complex care of a patient with bio-psycho-social problems and making sure that the transition of care through our healthcare system is smooth.

## CASE PRESENTATION

### Situation and Background

Mr H, a 74-year-old Chinese gentleman, is widowed and lives alone. He has a background medical history of hypertension

and hyperlipidaemia on follow-up with XX Polyclinic. Premorbidly, he was home-bound most of the time and independent with activities of daily living as well as ambulation at home. He rarely left his house to go to the community but on occasions when he did, he got around with the aid of an umbrella. His son visited him once every 2–3 weeks. Mr H had a supportive neighbour who bought him lunch on a daily basis. Mr H previously worked as a taxi driver and had retired 10 years earlier. He did not smoke or drink alcohol.

### Admission to Hospital for Falls

For this admission, he presented with a fall at home. He was taking an afternoon nap and was awoken by his neighbour knocking on his door to deliver his lunch. In his rush to get up, he felt giddy, lost his balance, fell, and landed on the left side of his body. He did not sustain any head injuries during the fall and was able to get up to open his door for his neighbour. As he was having severe pain over his left hip region and persistent giddiness, his neighbour called his son for help to send him to the hospital. He was seen at the emergency department and an X-ray of his left hip did not show any fractures. He was then admitted to the general ward with the diagnosis of fall for management.

In the general ward, I was the Registrar of the team providing in-patient care for Mr H, with oversight management by the team Consultant. On further history taking, Mr H described himself as getting progressively weaker and his functional status declining slowly for the past 6 months. Previously, he was able to walk independently at home but now he needed to hold on to the furniture around his house for support while walking. Getting up from bed was increasingly difficult for the past 1–2 months and he also experienced non-vertiginous giddy spells during those position changes. He did not complain of any visual blurring, chest discomfort, shortness of breath or palpitations. During his consult with the doctors in XX Polyclinic, he had highlighted those issues to them but was told that everything was fine, with the exception of borderline low blood pressure, to which the doctor then reduced his dose of medications. He mentioned that he had had a number of near-falls over the past 6 months. As his symptoms progressively worsened over the past 6 months, Mr H experienced low moods and was in despair most of the time. He also lost interest in his favourite hobby, which was watching soap operas on television. His bedside Abbreviated Mental Test (AMT) was 9/10. His Mini-Mental State Examination (MMSE) was 27/30 and his 7-item Geriatric Depression Scale (GDS) was more than 5, which was indicative of depression. He did not have any active suicidal thoughts at the time of assessment. He did not complain of any localised symptoms suggestive of infection.

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His chronic disease medications were traced via the National Electronic Health Record (NEHR) and are shown below:

1. Nifedipine LA 60mg OM
2. Atenolol 50mg OM (reduced from 100mg)
3. Simvastatin 10mg ON

His latest blood tests are listed in Table 1.

**Table 1: Mr H's latest blood test results**

	Patient	Reference range
TC	3.15	< 5.2 mmol/L
TG	1.61	< 1.70 mmol/L
HDL	0.98	> 0.9 mmol/L
LDL	2.20	< 4.1 mmol/L
Sodium	137	135 – 145 mmol/L
Potassium	3.6	3.5 – 5.0 mmol/L
Urea	4.5	2.7 – 6.9 mmol/L
Creatinine	45	37 – 75 µmol/L
AST	13	12 – 42 U/L
ALT	25	6 – 66 U/L

## Assessment

On examination, Mr H was frail looking. His Body Mass Index (BMI) was 17.5kg/m<sup>2</sup>. He did not have a Cushingoid appearance and no hyperpigmentation was seen. He did not have features of Parkinsonism. Mr H was noted to have significant postural blood pressure drop. His supine BP was 125/70mmHg and his standing BP 3 minutes later was 85/40 mmHg. His resting pulse rate was regular in rhythm at 60/min. He was not clinically dehydrated. His cardio-respiratory examination was normal. Visual field assessment was normal. Proximal weakness with power 4/5 was detected in both his upper and lower limbs. Proprioception was intact. There were delayed relaxation of his ankle and bicep jerks. No obvious goitre was seen. A resting electrocardiogram (ECG) was performed which showed sinus bradycardia at heart rate of 60/min with no prolongation of the PR interval. His timed up-and-go test was more than 10 seconds and his gait was slow and unsteady due to his weakness. His hand-grip strength was only 10kg (normal hand-grip strength is 24.71 ± 8.30kg for male patients aged 70–79).<sup>1</sup>

Mr H's problem list at that point of time was as follows:

### 1. Falls

Contributed by postural hypotension, likely secondary to antihypertensive medications, and proximal myopathy with delayed relaxation of reflexes, that might have been due to undiagnosed hypothyroidism. The falls resulted in the left hip contusion.

### 2. Frailty

Contributed by poor nutrition, because of difficulty accessing food due to limited mobility.

### 3. Possible depression

Complicated by poor social support.

### 4. Adverse social circumstances

Contributed by caregiver son being busy at work and unable to tend to his needs in the daytime.

## RECOMMENDATION, RESOURCES, RESPONSIBILITY, AND RELATIONSHIP

### Ward Management

#### 1. Newly diagnosed hypothyroidism

Thyroid Function Test (TFT) showed elevated Thyroid Stimulating Hormone (TSH) 12.0 mU/L (0.701 – 4.28), and low free T<sub>4</sub> at 1.4 pmol/L (12.7 – 20.3), confirming the presence of hypothyroidism. Thyroxine replacement was started gently at 25µg daily. Repeat TFT was scheduled 4–6 weeks later for further dose adjustment.

#### 2. Postural hypotension

In view of persistent postural hypotension, his antihypertensive medications were withheld. His hydration status was closely monitored, and postural hypotension behavioural modification advice was given to him which included avoidance of large meals, hot shower baths, and rapid change from supine to erect position. We noted a gradual improvement in his postural hypotension that eventually resolved itself. As his supine blood pressure was optimal at 140/80mmHg, his antihypertensives were not restarted.

#### 3. Depression

His mood improved with the commencement of thyroxine replacement and we expect to observe further improvement in his mood as he becomes euthyroid. His repeated 7-item GDS 2 weeks later was less than 5. Regular paracetamol 1g three times per day was initiated for pain control for his left hip contusion, which was subsequently taken off when he became pain-free.

#### 4. Poor nutrition due to poor social support

Mr H had a low albumin level of 31g/L. His BMI was 17.5kg/m<sup>2</sup>. His diet history was explored: He took only one slice of plain bread for breakfast, and one full share of lunch bought by his neighbour. He did not eat dinner due to his limited mobility and home-bound status. His lunch usually consisted of one portion of vegetables, and one portion of meat with white rice. The dietician recommended continuing full-share meals with 1 packet of Ensure per day, with a targeted 5 kg weight gain over the next 6 months.

His baseline full blood count, serum calcium, magnesium, phosphate, and renal panel were normal. His 25(OH)D level was low at 12.6 NG/ML (30-100) and he was started with Ergocalciferol 50000 IU weekly for 8 weeks, then switched to cholecalciferol 1000 IU once in the morning. Bone Mineral

Density (BMD) study was arranged which showed osteopenia. Oral calcium supplementation was thus started.

Physiotherapy (PT) and Occupational therapy (OT) sessions were initiated upon admission to the general ward to improve his functional status. Our occupational therapist acquired photos of Mr H's home environment and identified issues of furniture cluttering.

We also sought the help of our Medical Social Worker (MSW) in rendering financial aid. The Meals-on-Wheels Service was engaged to help him with getting proper meals upon discharge. A family conference was arranged with Mr H's son, which identified issues of financial support and home cluttering that were subsequently addressed. We activated the Enhancement for Active SENiors (EASE) programme to help with home modifications and improvement such as grab bar installation and anti-slip floor mats to ensure a safer home environment.

### Progress of Rehabilitation

Through his daily PT and OT sessions, Mr H showed progressive improvement in performing both his Activities of Daily Living (ADLs) and instrumental ADLs (iADLs). His weekly handgrip strength also showed improvement, from the initial 18kg to 30kg over 20 rehabilitation sessions, stretching over 4 weeks.

His Functional Independence Measure (FIM) score<sup>2</sup> improved from an initial score of 68, reflecting semi-dependent ADL status, to 108 which reflected full independent ADL status. Mr H achieved the target of maximal efficacy during the 4 weeks of rehabilitation.

Repeat TFT at 4 weeks showed improvement, with TSH 8.3mU/L, and free T4 16.0 pmol/L indicating subclinical hypothyroidism. Thyroxine dose was increased to 50µg daily and repeat TFT scheduled 4-6 weeks later. His mood had improved significantly, and he was able to sleep well. Hence, he was able to enjoy his daily therapy activities.

He had gained 2 kg of weight since admission and his rechecked albumin level was 34g/L. He did not have any further episodes of postural hypotension, and his blood pressure remained stable below 150/90mmHg.

Information on various community programmes was conveyed to Mr H to promote healthy living, promote ageing in place, and tackle frailty. All his medical and social issues were holistically looked into, and appropriate assistance arranged to help Mr H before his discharge. Prior to discharge, Influenza and Pneumococcal vaccinations were given to Mr H, with a memo to his family physician to complete the pneumococcal vaccination 1 year later and to continue with his annual influenza vaccination.

### Discharge Back to Primary Care Service

In view of the change in medications during this hospitalisation, a detailed memo highlighting his problem list and change of medications was provided. As Mr H preferred to have his follow-up at XX Polyclinic, the family physician was contacted personally for Mr H's case to be handed over. Subsequent phone consults with the family physician confirmed that Mr H had attended his clinic, and is now currently under his care.

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### Author Contributions

Dr Xu Bang Yu took care of the patient during his hospitalisation.

Dr Xu Bang Yu was involved in the manuscript preparation. Dr Xu Bang Yu has abided by the International Committee of Medical Journal Editors (ICMJE) criteria pertaining to authorship.

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## LEARNING POINTS

- **SBAR4 Complex care model<sup>3</sup> — Situation, Background, Assessment, Recommendation, Resource, Responsibility, and Relationship. SBAR4 provides a framework for managing a complex case with bio-psycho-social components. It is based on the SBAR model of clinical communication and Pendleton's 7 Tasks of consultation. The advantage of using SBAR4 is that it will assist the family physician to have an organised approach to complex care and to coordinate the care across the multidisciplinary team involved in the care of the patient.**
  - **Falls in the elderly require a comprehensive bio-psycho-social approach to evaluate for the root cause. More often than not, the causes are multi-factorial and we need to deal with all the root causes in order to effectively reduce the patient's risk for falls.**
  - **Frailty is a marker of poor functional outcomes. Sarcopenia is an important modifiable risk factor for frailty.<sup>4</sup> Sarcopenia may be reversed with good nutrition and rehabilitation programmes to improve muscle mass and strength. Various community programmes are available to promote successful ageing, e.g. SPICE,<sup>5</sup> and NTUC's Silver Circle for Day/Senior Care Centres.**
  - **Good communication with primary care physicians is important so as to ensure smooth transition back into the community along with optimal management of chronic diseases in order to minimise re-admission.**
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