

ACUTE GERIATRICS

Older person with vague symptoms in the emergency department: Where should I begin?

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Scenario 1

Ms J is 81 years old, an active retiree and lives alone. She has been brought to the ED by her daughter feeling tired and flat. She felt well getting up early this morning, but an hour later felt very fatigued, mildly short of breath and nauseated. She returned to bed awaiting her daughter's visit. She has a past history of hypertension, diabetes and hypothyroidism. Her vital signs are normal. The junior ED registrar asks how she should work up this patient?

Introduction

A vague older person presentation is one that does not demonstrate core features of illnesses typically seen in younger patients. Such patients can present with weakness, fatigue, dizziness, confusion, recent falls, anorexia, gait disturbance and functional decline. These symptoms lack enough specificity to construct a differential diagnosis to follow a standard evaluation pathway. About 13–20% of older

patients attending Dutch, Swiss and Canadian EDs had vague symptom presentations, sometimes associated with hospitalisation, long lengths of stay and serious diagnoses.^{1–3} Misdiagnosis rates for patients presenting with non-specific symptoms can be over 50%⁴ and some patients with vague complaints die of potentially treatable illness soon after presentation.^{1–3}

These are among the most challenging and resource demanding presentations in emergency medicine, requiring the highest level of physician skill in multiple domains. Vague complaints may be the only manifestation of an acute disorder in older patients. As the vagueness of the presentation increases, the breadth of the possible diagnoses also increases. Each of the few studies reporting diagnoses for the vague ED presentation present a different list of the most common diagnoses; however, the complete list of possible diagnoses is very long.^{1–3} A typical patient with a vague complaint will be older, multimorbid and take many medications. A common label for such presentations is ‘acopia’: a term clinicians should avoid using as it leads to premature diagnostic closure and

conveys a judgement of the patient, neither of which contribute to well-being in an older person.⁵ Labelling a patient with acopia says more about the coping skills of the clinician than the patient.

Faced with a seemingly inexhaustible list of causes, it is crucial to first diagnose time critical conditions that present atypically, such as acute coronary syndrome^{6,7} or pneumonia.⁶ Next, consider issues that are almost exclusively a problem in older people such as medication problems⁸ as well as conditions that are commonly non-specific or vague in their presentation in all age groups such as malignancy, metabolic disorders, thyroid disease, depression and anxiety (Table 1). Older, frail patients with atypical presentations are often under-triaged and clinicians will need to approach the patient with a high index of suspicion for serious pathology.

There are several strategies that emergency clinicians can use to improve the history and examination of an older person with a vague complaint (Table 2). With time and thought, this patient group offers emergency physicians the opportunity to use all their skills, training and experience. A substantial difference can be made to patient and family journeys, particularly when a diagnosis is made that has been elusive for some months.

History

Barriers to obtaining a detailed history include altered physiological responses to illness, cognitive, sensory or language deficits, attribution

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TABLE 1. *Differential diagnosis for older patients presenting to EDs with a vague complaint*

Category of diagnosis and prevalence in the vague presentation (%) ³²	Cause	Assessment considerations
Cardiac (14%)	AMI	Common atypical symptoms for AMI included dyspnoea (50.2%), general weakness (9.8%), dizziness (9.2%), syncope (6.3%) and cognitive changes (4.5%). ^{33,34}
Neurological (9%)	Valvular Heart failure	Hypo-active presentation more likely to be occult or missed. Collateral history often essential.
	Delirium, intracranial haemorrhage, stroke	
Metabolic and haematological	Renal failure or uraemia Iron or other nutrient deficiencies Hypo/hypernatraemia Hypo/hyperthyroidism Adrenal insufficiency Anaemia ³⁵	Consider adrenal insufficiency in those taking long-term corticosteroids.
Infections (24–60%)	Sepsis, UTI	Reduced immune response, altered sympathetic drive and decreased ability to mount a fever associated with ageing.
	Pneumonia	Complaints of general weakness, cognitive decline and loss of appetite occur in >50% of patients presenting with non-specific symptoms found to have pneumonia.
Medications	Diuretics Steroids Statins Antihypertensives Benzodiazepines SSRIs Narcotics Antiarrhythmics	Tolerance and indication for medications changes over time, so new and changed doses are just as important as no change over a prolonged period. ³⁶
Surgical (7%)	Biliary tract pathology Appendicitis Perforation Mesenteric ischaemia Ruptured AAA	In the setting of acute abdominal pathology, older patients have a lower likelihood of focal tenderness and are more likely to have a hypothermic response with infection. Decreased abdominal wall musculature make rebound and guarding less common even with peritonitis.

TABLE 1. *Continued*

Category of diagnosis and prevalence in the vague presentation (%) ³²	Cause	Assessment considerations
Malignancy		Historical symptoms of weight loss/night sweats/chronic cough/dark stool. Undertake a comprehensive review of symptoms. Ask if there has been age appropriate cancer screening as well as family history of malignancies. If there is high clinical suspicion, pursue further imaging based on the suspected malignancy.
Pulmonary (5%)	COAD exacerbation Pulmonary embolism	Highest incidence of pulmonary embolism in 70–80 age group.
Elder abuse		This diagnosis must be considered in the vague presentation. Once considered, history should be obtained from as many sources of possible. ^{15,16}
Mental illness		A diagnosis that is not considered enough in the ED, depression in older people is a significant public health problem and is often unrecognised and inadequately treated. Epidemiologically, incidence ranges from 1 to 5% among individuals aged 65 and older. ^{37,38}

of symptoms to normal ageing⁹ and withholding information because of fear of hospitalisation or becoming a person in need of care.¹⁰ Patience and information taken from multiple sources are essential.

Polypharmacy is common.^{1,11} Multiple physiological changes occur with ageing that impact absorption, distribution and clearance of medications.¹² An accurate and detailed drug history that includes recent changes to both medication type and dose of long-term medications is essential. Accuracy is improved if details are taken from at least two sources.¹³ Involvement of an ED pharmacist is cost effective, but is often unavailable.¹⁴ Seek information about recent changes, sedatives or anti-seizure medication and falls while on anticoagulants. Have a low threshold for measuring levels of medications

with a narrow therapeutic range, for example, digoxin.

Finally the possibility of elder abuse must be considered. Consider whether the presentation and collateral history is consistent with findings, particularly if injuries are present.^{15,16}

Examination

Physical examination is obviously important. Physiological changes, multi-morbidity and polypharmacy in old age mean that lack of physical examination findings does not exclude serious pathology.¹⁷ Older adults can have apparently normal vital signs in the presence of serious illness. For example septic older adults may have no fever or tachycardia and a blood pressure reading in the normal range

may be low for them if they have chronic hypertension.¹⁸

In acute abdominal conditions, some patients will not be able to say that they have abdominal pain, but will have abdominal tenderness or something obvious like a visible hernia. Appendicitis, diverticulitis or cholecystitis can be present without pain or abnormalities on examination.^{19–21}

Scenario 2

Mr C is an 82-year-old man who has been transferred from a residential aged care facility (RACF). His family has asked for him to be taken to the ED as he has not been himself lately, sleeping more and communicating less. He has a history of Alzheimers (usually dis-oriented), hypertension and

TABLE 2. *Strategies to improve the utility of the history and examination*

Strategy	Rationale
Specifically asking about symptoms often attributed to ageing, for example, shortness of breath, memory/confusion, incontinence, gait difficulties, dizziness, constipation, fatigue.	Patients may assume that their symptoms are a normal part of ageing. Symptoms such as exertional dyspnoea and chest tightness, tiredness, sleep problems and forgetfulness are more likely to be ignored whereas symptoms such as loss of consciousness or leg or arm altered sensation are more likely to be attributed to disease.
Improving sensory deficits, for example, hearing aids, glasses, adequate lighting, quiet rooms.	The clarity with which symptoms are conveyed may be impaired due to cognitive communication difficulties such as delirium or dementia and/or sensory impairments such as deafness, visual loss and neuropathy.
Obtain history from multiple sources.	Different perspectives may be obtained from the patient, family, long-term carers, GPs, treating specialists and friends/neighbours. Some will offer background health information, others details of functional decline or recent acute illness that the patient may not be aware of or be able to describe themselves.
Explore specific findings in detail.	If someone has not been able to get to the shops, then explore why, the reasons may explain the presentation—such as exertional dyspnoea.
Obtain a best possible medication history.	A combination of history sources is essential to determine the best possible medication history. Aged care facilities provide the most accurate information, other sources have two to four regular medication-related discrepancies per patient, with the commonest error being omission of medications. ¹³
Consider using a validated tool to find delirium.	Emergency physicians consistently under-recognise delirium. ³⁹ There are screening tools available with good rule-out characteristics; which are short and can be used at the bedside. ⁴⁰ Their specificity varies and the tools require widespread validation.
Undertake a comprehensive physical examination, regardless of whether there are related symptoms in the history.	The physical examination will often demonstrate unexpected and useful findings, such as focal pneumonia, acute abdomens, cellulitis and occult or forgotten injuries.

appendicectomy. He walks short distances, with a 4-wheel walker. On examination Mr C appears confused, mainly somnolent and intermittently agitated. He seems mildly tender in his right upper quadrant without other significant physical findings.

Investigations

The challenge is to balance under and over-investigation. A low threshold for advanced abdominal imaging to investigate Mr C is prudent. Age-related treatment bias is well documented¹² and several studies find

that under investigation and delays in treatment worsen outcomes in older people.¹ A more aggressive investigative strategy is generally useful in the older patient with a vague presentation.^{10,11} Broadly speaking, investigations have a higher yield owing to the increased prevalence of disease and shrouded symptomatology.²² This must be counter-balanced by the public health need to use healthcare resources wisely and avoid waste (Table 3).

The investigation strategy must be tempered by a thoughtful and forward-looking approach which

holistically considers the patient. It is almost always best to involve the patient, their caregivers and next-of-kin in decision-making. Work-up can then be tailored to a desired realistic outcome. Some patients may wish to pursue aggressive therapy pathways and a clear diagnosis helps with this. Sometimes investigations will be performed despite a low likelihood of the acceptance of invasive treatment. Prognostic information leads to earlier access to palliative-focused care. Some patients may not want a diagnosis but just want to focus on symptomatic support.

TABLE 3. ED investigations that may be useful in some older patients with vague symptoms

Investigation	Differential diagnosis	Test characteristics in older patients
ECG	Myocardial infarction and arrhythmias (commonly rapid atrial fibrillation/flutter)	Longstanding ECG abnormalities may mask ischaemia (e.g. pre-existing LBBB). Blunted tachycardic ceiling due to age or AV blocking drugs alters typical rate in rhythms such as SVT and VT.
Venous blood gas	Rapid identification of gross abnormalities such as high lactate, glucose abnormality, anaemia, critical renal impairment, acid–base disorders	Impaired respiratory compensation to metabolic disorders.
Full blood examination/count	Anaemia Iron deficiency Infection Haematological malignancy	Reduced immune response to infection.
Electrolytes and urea/creatinine	Renal impairment/failure Sodium disorders	Creatinine is not an accurate way of assessing renal function in older patients, due to declining muscle mass. Calculation of creatinine clearance may be more useful. ¹²
High sensitivity troponin	Acute myocardial infarction	Frequently non-specific. Associated with increased mortality.
Inflammatory markers (CRP, possibly ESR)	Infections, inflammatory disorders, malignancy	Low threshold for ESR testing in headache patients for Giant Cell Arteritis.
Thyroid function	Hypo and hyperthyroidism	
Other blood tests as indicated by history, physical examination and after medication review	Iron, B12, folate, LFTs, Digoxin, anticonvulsant levels, INR	
Urinalysis and urine culture	Urinary tract infection	Asymptomatic bacteruria is common. Need bacteruria with symptoms of UTI to make diagnosis.
Chest X-ray	Pneumonia Left ventricular failure	Kyphosis may impair interpretation.
CT abdomen	Acute surgical pathology	High yield in undifferentiated abdominal pain or tenderness. Clinicians should have a liberal scanning approach.
CT brain or MRI brain	Bleeds Infarction	Due to age-related involution, large intracranial haematomas are often accommodated without cerebral oedema or midline shift. CT is insensitive in suspected posterior stroke. MRI is the investigation of choice if available.
Emergency physician performed POCUS	Multiple possible applications, including: AAA, pneumonia/pleural effusion, pericardial effusion and LV function or evidence of pulmonary embolism, gall stones, intravascular fluid state, bladder volume	Limited evidence base in the older person, however has the potential to be useful in skilled hands in EDs, more research is needed.

Disposition

In many patients the diagnosis will remain unclear. The risks of discharging the older person with an undefined illness must be balanced against the risks of hospital admission for observation.²³ Existing discharge risk stratification tools such as the Identification of Seniors at Risk and Triage Risk Screening Tool are of limited value due to their low specificity.^{24,25} Hospitalisation does not necessarily reduce the risk of serious adverse outcomes for older patients who present after an unexplained event such as syncope.²⁶ Decisions will need to be made based on local access to ongoing care and support, both in hospital and the community.^{27,28}

ED resources

Resourcing departments appropriately is vital and will allow adequate time for medical and team-based assessment (e.g. ED pharmacist or geriatric nurse), delirium screening and medication review. Some health services have dedicated units or pathways for older people presenting with an acute illness who require a short admission, which may reduce length of stay and complications such as functional decline.^{29–31} Training junior doctors to appreciate the nuances of the vague older patient presentation is essential. Traditional training, focusing on classical presentations, does not equip our graduates with the skills needed to manage these patients.

In summary, assessing an older person with vague complaints in ED requires time and meticulous assessment and investigation. Assessment is improved by using many strategies. When possible it is essential to understand the patient in their biopsychosocial context.

Author contributions

All authors participated in the revision and drafting of the manuscript.

Competing interests

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