Crisis At Home: The Role of the Family Caregiver in Acute Care Delivery Outside Hospital Walls

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Background

Hospital at Home (HaH) I is a dynamic and patient-centered healthcare model, capable of integrating multiple patient care tools including personnel, technology and caregivers. HAH has the ability to adapt to patient complexity and acuity, aiding the assessment and response to potentially changing patient conditions. Here, we present an exemplary patient scenario where the HaH healthcare team supported the process of diagnosis and follow-up management of a patient suspected of having melanoma and acute complications related to metastases. Metastatic melanoma is the 5th most common malignancy worldwide,[1] and can affect people of any age, sex or ethnicity.[2] While melanoma most commonly metastasizes via the lymphatic system to skin, lung, brain, liver, bone and intestine,[3] it has been found anywhere in the body in post-mortem evaluations. As such this requires a high index of suspicion when patients have vague symptoms in this clinical context.

Case Introduction

- Mr. A,B. Domen, 78-year-old male is a living at home with wife and supported by son. Past medical history of right shoulder melanoma in 2022 -wide local excision and sentinel node resection (2/2 nodes negative), obstructive sleep apnea (on CPAP,) coronary artery disease, iron deficiency anemia, and stable monoclonal gammopathy.

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Summer 2024

4-day brick and mortar (BAM) admission with weakness, hypotension and muscle spasms.

He had hypocalcemia, supplemented by IV and oral routes. An extensive infectious, malignant and metabolic work-up which did not reveal an etiology, He was referred to endocrinology.

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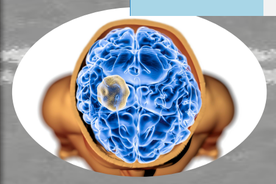
Fall 2024

- ED visit for ongoing weakness and unresolving radicular leg and back pain.
- CT head showed multiple intracranial metastases with mass effect and perilesional edema
- Neurosurgery was consulted in ED and advised radiation oncology referral. Started on dexamethasone
- MR brain 9 days later showed definite multifocal brain metastases with associated hemorrhage

CBC	**WBC 12.2; ANC 9.5; Hgb 97 – MCV 84**	**Electrolytes**	**Na 142; K 3.4; Cl 107; CO2 28**
Renal	Creatinine 76,; eGFR 83	Hepatic	ALT 21, ALP 53, GGT 14. INR 1.3; total bilirubin 3
Endocrine	Ca 1.92; iCa 1.04; PTH 54, phosphate 1.04; magnesium 0.79	General	TSH 6.58; iron 4; TIBC 54; iron saturation 7%; ferritin 43



Medications

1. Acetylsalicylic acid, 81 mg, oral, once daily
2. Levothyroxine, 150 mcg, oral, once daily
3. Polysaccharide iron, 300 mg, oral, once daily
4. Rosuvastatin, 10 mg, oral, once daily
5. Cyanocobalamin (Vitamin D) 250 mcg, oral, once daily
6. Ascorbic acid (Vitamin C) 500 mg, oral, once daily with breakfast

HAH Admit Day

- EGD – no lesions or evidence of bleeding
- Colonoscopy – mild sigmoid diverticula with no bleeding, masses or polyps

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Outpatient diagnostic workup resulted in a total 3-month delay!

Referred urgently by General Internal Medicine clinic to provide close monitoring of his hemoglobin and clinical status, to workup his iron deficiency anemia and possible melanoma.

HAH Night 2

18:00 – Son called HAH MD as father had 6/10 abdominal pain. Son instructed to take vitals using dRPM kit. Advised trial of laxatives for constipation

18:45 –Pain resolved. MD suggested call back if pain recurred.

23:30 – Son still concerned, called MD. Vitals stable (via dRPM). MD tele-mentored patient's son to perform abdominal examination revealing peri-umbilical rebound tenderness

Suspicion for post-endoscopy perforation

Despite being temporarily pain free, MD escalated care by sending patient to ED via ambulance

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Emergency Room

Arrived at ED without visible pain

Within 45 minutes had severe pain crises requiring opioids

CT demonstrated perforated jejunal neoplasm with appearance favoring bowel lymphoma

Surgery Admission

Emergency exploratory laparoscopy with small bowel resection. Pathology confirmed malignant melanoma.

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Transfer to HAH

Post-op the HAH team transferred patient back to monitor labs, biopsy results, and to expedite follow-up with the Cancer Centre to start urgent chemotherapy.

Case Discussion and Conclusions

1) HAH is a dynamic, patient-centred care model able to handle a high level of complexity and acuity.

2) The patient and informal caregiver are a wealth of information and must be incorporated into the care team

- Often family caregivers are more familiar with their loved ones' health and can detect subtle changes in clinical status that provide critical information to the clinical team.
- This is particularly important in HAH where most of the monitoring occurs by patients and their caregivers.

3) Tele-mentoring can be a cornerstone in the diagnostic process

- Mr. X's son's tele-mentored abdominal exam was the key factor in the physician's decision to escalate care and resulted in expedited diagnostics and life-saving, time-sensitive surgery.

4) A high index of suspicion for complications of metastatic melanoma despite having vague or unclear symptoms is crucial.

- Given the normal scope and no prior GI symptoms, it was logical for his providers to believe that his anemia was not attributable to metastases in the GI tract. However, the MD's assessment in the context of the recent scope and tele-mentored physical exam resulted in a high index of suspicion leading to expedited imaging and life-saving surgery.

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