

## MORNING REPORT

## You Can't Escape Your Past: The Challenges of Evaluating a Nonagenarian

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Mr. D is a 90-year-old man in an independent living community who presented to his primary care physician with weight loss. His medical history is notable for prostate cancer treated with radiation in 2004, atrial fibrillation, ischemic colitis status post partial colectomy, and an abdominal aortic aneurysm (AAA) status post an open infrarenal repair twenty years ago. Over three months, he lost 15 pounds in the setting of a poor appetite.

**C**linically significant weight loss is often defined as a loss of 10 pounds or > 5% of usual body weight over a 6 to 12-month period. In older adults, the prevalence of unintentional weight loss ranges between 8-27% depending on comorbidities and is independently associated with an increased all-cause mortality.<sup>1,2</sup> Poor nutrition and weight loss in older adults can arise from acute and chronic illnesses, as well as other unique risk factors such as cognitive dysfunction, functional limitations, poor dentition, medications, social isolation, frailty syndrome, and depression.<sup>1</sup> While a thorough geriatric assessment includes examination of these risk factors, the patient in this case meets criteria for clinically important unintentional weight loss and should be assessed for serious underlying pathology.

*At this patient's first visit, a review of systems was negative for fever, chills, night sweats, abdominal pain, nausea, vomiting, or changes in bowel movements. His vital signs were normal and his weight was 125 pounds (BMI 17 kg/m<sup>2</sup>). On exam, he had moist mucus membranes, regular heart rate with an irregular rhythm, and no audible murmur. Pulmonary auscultation revealed normal breath sounds and abdominal exam showed a protruding rib cage but no tenderness, palpable masses, or distention. He did not have peripheral edema, rash, or adenopathy. Neurologic exam was unremarkable. He was alert and oriented and denied mood disturbances.*



**CT of abdomen/pelvis with contrast shows postsurgical changes of surgical repair of infrarenal abdominal aortic aneurysm with widely patent aortobiliac surgical graft. Aneurysm sac contains large amount of fluid and gas. There is a defect of the anterior aspect of the aneurysm sac with fistulation to the adjacent D4 duodenal segment and surrounding fat stranding.**

Clinically significant involuntary weight loss is most commonly due to an organ-related failure, chronic infections, and malignancies.<sup>1</sup> Because this patient has a nonspecific presentation, proceeding with comprehensive blood testing is generally recommended, including tests for inflammation (ESR, CRP) and chronic disease (CBC, CMP, TSH, cortisol). Tumor markers are generally not initially recommended. However, in a patient with a history of malignancy such as in this case, a PSA would also be appropriate.

*Basic labs were obtained includ-*

*ing a CBC, BMP, TSH, PSA, cortisol, CRP, ESR, LDH and ANA. Results were remarkable for ESR 38 mm/h and CRP 6.8 mg/dL.*

Inflammatory markers are nonspecific and, when elevated, require further history gathering, specifically addressing risk factors for chronic infection, malignancy, and autoimmune conditions.

*One week later, Mr. D returned to clinic for reassessment. His wife reported the new development of fever of 101-102 degrees °F for the past five days. No other new symp-*

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toms had arisen. A travel history noted a trip to Boston, MA, four months ago, but otherwise Mr. D and his wife spent the majority of time at their home in a metropolitan area of VA. Exposure history, including history of environmental toxins and exposure to exotic or atypical infections was remarkable only for time spent in the U.S. Navy stationed in Western Europe 70 years ago.

The presence of a fever in an older adult is especially significant. As one ages, the physiologic ability to mount a fever may be attenuated. One study of 320 hospitalized patients with pneumonia confirmed an inverse relationship between body temperature and age.<sup>3</sup> On average, there is at least a 1 °C difference in temperature between 20-year-old patients and 80-year-old patients, making the presence of such a high temperature in this 90 year old man quite remarkable.<sup>3</sup> In many cases, a fever in older persons may represent common infectious and noninfectious etiologies. However, the geriatric provider must also consider that older adults often present atypically with typical illnesses (such as endocarditis, intra-abdominal abscesses, and hyperthyroidism), and less common etiologies may be more common in this age group (such as tuberculosis and temporal arteritis).<sup>4</sup> This patient's recurrent fever, nonspecific history and exam findings, and elevated inflammatory markers should prompt the collection of blood cultures, computed tomography (CT) imaging, and a PPD to screen for tuberculosis especially given his history in the military.

*Blood cultures, repeat ESR and CRP were obtained, as well as a transthoracic echocardiogram (TTE) to evaluate for endocarditis and CT of chest and abdomen to search for occult infection or malignancy. Within two weeks, the patient's CRP had increased from 6.8 to 26.7 mg/dL. TTE did not show any significant valvular abnormalities, abscesses or vegetations. CT of the chest and abdomen (see figure on page 6) revealed findings.*

Secondary aortoenteric fistulas are a rare but serious complication of abdominal vascular surgery. The annual incidence after elective and emergency procedures is 1% and 14% respectively.<sup>5</sup> Mortality ranges between 30-60% with surgical treatment and 100% without.<sup>6</sup> Median time between primary surgery to fistulation is approximately two years, although 1/3 of cases occurs five years or more after primary surgery. Most often, patients present with GI bleeding, abdominal pain, and shock.<sup>5</sup> In this case, the patient presented only with weight loss and fever. He does have a history of prior AAA surgery, which puts him at risk for aortoenteric fistulation.

*Vascular surgery was consulted and the patient was directly admitted to the hospital. Blood cultures grew Strep Anginosus and he was started on vancomycin and piperacillin-tazobactam. Treatment options including surgical vascular reconstruction with an extra-anatomic bypass and graft explant or lifelong antibiotics were offered.*

This patient's age and comorbidities

place him at high risk for perioperative complications should he pursue surgical reconstruction. In this case, it is essential to explore with him and his family their understanding of his illness and expected treatment outcomes. Only after understanding their values and the goals for his care can the most appropriate treatment plan be recommended.

*After discussing the potential risks and benefits of surgical reconstruction, Mr. D chose to pursue lifelong antibiotics in order to spend his remaining time with his family and avoid a prolonged hospitalization. He was prescribed levofloxacin, metronidazole, and amoxicillin and discharged home with his wife.*

This is a case of a 90-year-old man with an atypical presentation of an unusual but potentially devastating complication of a remote surgery. It is common for older patients to present with vague, non-focal symptoms such as malaise and weight changes. Although a majority of these cases are due to non life-threatening etiologies, a high index of suspicion for infectious, autoimmune, and malignant diagnoses must be maintained. The clinician's dilemma is in avoiding costly, unnecessary testing in patients with non-life-threatening etiologies, while ensuring that those with conditions associated with high mortality and morbidity are diagnosed promptly, all within the appropriate context of a patient's and family's overall goals of care. Frequent follow up visits, efficient communication between the

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clinician and the patient's family or care providers, and high-quality patient education can help facilitate a prompt diagnosis.

This case also demonstrates the importance of considering surgical complications in the differential of a targeted geriatric evaluation. Internists must be aware of their geriatric patients' surgical histories and potential post-operative complications, regardless of how long ago the surgery was performed.

### References

1. Alibhai SM, Greenwood C, Payette H. An approach to the management of unintentional weight loss in elderly people. *CMAJ*. 2005 Mar 15;172(6):773-780.
2. Wannamethee SG, Shaper AG, Lennon L. Reasons for intentional weight loss, unintentional weight loss, and mortality in older men. *Arch Intern Med*. 2005 May 9;165(9):1035-1040.
3. Roghmann MC, Warner J, Mackowiak PA. The relationship between age and fever magnitude. *Amer J Med Sci* 2001 Aug;322(2):68-70.
4. Woolery W.A., Franco F. Keys to determining the etiology in older patients. *Geriatrics*. 2004 Oct;59(10):41-45.
5. Tagowski M, Vieweg H, Wissgott C, et al. Aortoenteric fistula as a complication of open reconstruction and endovascular repair of abdominal aorta. *Radiol Res Prac*. 2014;2014:383159. doi: 10.1155/2014/383159. Epub 2014 Sep 14.
6. Bergqvist D, Bjorck M. Secondary arterioenteric fistulation—a systematic literature analysis. *Eur J Vasc Endovasc Surg*. 2009 Jan;37(1):31-42.

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