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Surviving as a cancer survivor: A case report of radiation-induced autonomic dysfunction
By Daphne Sy, MS3 & Mark Schauer, MD

Background:
While radiation and chemotherapy have achieved high rates of cure for Hodgkin lymphoma, the medical community is only now starting to characterize the long-term effects of chemoradiation on young survivors of cancers. New constellations of adverse effects continue to develop even decades later, raising questions:

- Should long-term follow up of cancer survivors be limited to five years with their oncologist?
- Is there enough need for “survivorship clinics” devoted to the surveillance concerns of former cancer patients?
- Should we train more PCPs who specialize in the unique risks of cancer survivors?

Case Presentation:
A 41 year-old woman presents to the ED with exertional shortness of breath, syncope, and chest pressure of increasing intensity for 2 days. Her PMH includes DM type 2, morbid obesity, and Hodgkin lymphoma at age 21, which was treated with ABVD and mantle radiation. Immediate complications included pericardial fibrosis requiring window surgery, and thyroid fibrosis requiring thyroidectomy. Over the past five years, she was diagnosed with progressive pulmonary fibrosis of the R upper lobe. Last year, a Type 2 AV block with episodes of syncope prompted AV pacemaker placement.

During admission, providers witnessed several sudden drops in BP (80s/40s) with reflex tachycardia (150s); these episodes would begin while the patient was lying still and resolved spontaneously within 15 minutes. Upon review of records from an outside facility, a cardiac workup in April 2016 included a TTE showing EF = 55-60%, and left heart catheterization showed mild coronary artery disease and minimally elevated pulmonary artery pressures. Despite these findings, she was diagnosed with heart failure based on clinical symptoms and placed on daily furosemide.

During current admission, BNP and Troponin I x2 were negative. CXR showed her heart size was at the upper borderline of normal; findings were stable since previous visit. NM stress test and cardiac MRI were both unremarkable.

A review of the long-term outcomes of Hodgkin lymphoma survivors established that many patients continue to develop fibrotic sequelae from chemoradiation, even two or more decades after their last treatment. Case reports described other survivors with similar symptoms. Recently, autonomic dysregulation independent of cardiac factors was shown in both resting and exercising heart rates, increasing in direct correlation with the number of years since therapy.

Conclusions:
- Hodgkin lymphoma survivors have many unique health concerns, such as increased rates of cancer, progressive fibrosis of thoracic and neck organs, and increased rates of cancers (e.g. esophageal).
- Anticipating these effects allows us to screen these patients effectively and avoid repetitive expensive workups.
- Current screening tests for autonomic dysfunction are currently too expensive/high burden for wider use; however, screening for cancers and fibrosis may be beneficial.
- Effective treatment has not been described.

References: