

Acute Cord Compression Left Untreated for Fear of Contracting COVID-19: A Case Report and a Call for Health Care Plans for Oncologic Emergencies during Crisis

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Abstract Coronavirus disease 2019 (COVID-19) is a pandemic that started in Wuhan city, Hubei province in China in December 2019 and is associated with high morbidity and mortality. This pandemic has overwhelmed health care systems in the USA, Europe and many other countries around the globe. Several health care institutions, including ours, SUNY-Downstate Health Science University in Brooklyn, New York, were designated as COVID-only hospitals. At the same time, patients with other serious illnesses refrained from seeking medical care because of the fear of contracting the virus at the health care facilities. In this report, we present a case of an octogenarian woman with breast cancer who was treated initially with radical mastectomy and chemotherapy, who then developed back pain in mid-March 2020, that later progressed to bilateral lower extremity weakness secondary to cord compression, which was diagnosed nearly 4 weeks after her initial symptoms started. The patient had refrained from seeking medical care citing fear of contracting COVID-19 in the hospital. This case illustrates the dire need to establish mechanisms within our health care system to manage oncologic (and other life or limb threatening) emergencies during times such as the COVID-19 pandemic.

Keywords: COVID-19, oncologic emergencies, cord compression, breast cancer

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1. Introduction

The COVID-19 pandemic that was initially reported in the Chinese province of Hubei in China in December 2019 has affected to-date (June 2020) nearly 6 million people and resulted in over 360,000 deaths worldwide mainly due to severe acute respiratory syndrome (SARS-Cov-2). It is characterized by a heightened inflammatory and prothrombotic state that is known to cause various cardiovascular manifestations such as thromboembolism, acute coronary syndrome and stroke. Health care systems in the USA and around the world were largely unprepared to handle an epidemic of such magnitude. Given the highly infectious nature of the virus and the need to isolate and social distance infected and non-infected patients, many of the hospitals around the world were either designated as COVID-only centers or were mainly utilized to handle the astronomical number of patients presenting for COVID-19 care.

According to a Kaiser Family Foundation (KFF) poll released May 27, 2020, 48% of Americans have a family member who has delayed care during the pandemic, with 1 in 10 reporting their family member's condition has worsened as a result [1]. The Journal of the American College of Cardiology also recently reported that visits to emergency departments had dropped by 38% in March and April [2]. This sharp drop in patients seeking care ultimately prompted the president of the American Medical Association to issue a public warning to providers not to let "routine and essential medical care become another casualty of this pandemic" [3]. Cancer patients are perhaps, among the most vulnerable in our population. These patients are reported to have increased incidence of COVID-19 infection, compared to non-cancer patients due to their general immunosuppressive state either from the malignancy or chemotherapy [4]. This unprecedented crisis has discouraged many patients including our patient from seeking care for even the most life-threatening illnesses such as acute cord compression. Since cord compression

requires prompt diagnosis and intervention, it is crucial to develop innovative strategies and propose practical measures for managing high level care in such vulnerable population during COVID -19 crisis.

2. Report of the Case

This is an 84- year old female diagnosed in 2018 with stage IIIA (pT2N2M0, G3, ER-/PR-/Her2+) invasive ductal carcinoma of the right breast for which she underwent a right modified radical mastectomy and ALND, followed by adjuvant chemotherapy and radiation. Patient reportedly began experiencing upper back pain associated with aching cramps in a bandlike fashion across her flanks, exacerbated by deep inspiration, in mid-March 2020, but refrained from seeking medical care due to a greater concern of contracting COVID-19 in a hospital setting. Unfortunately, it was not until the patient's pain had become nearly refractory to pain medications with associated decreased ability to ambulate independently due to bilateral lower extremity weakness, now present for over 4 weeks, that she finally agreed to seek medical care mid-April.

Upon presentation, the patient was found to have diminished strength in her bilateral lower extremities as well as mild saddle anesthesia. MRI Thoracic spine with contrast (Figure 1: A, B and C) demonstrated an acute 2 column biconcave fracture deformity of the T6 vertebral body with posterior retropulsion of the wall with spinal cord compression.

Neurosurgery was consulted, but the patient was felt to be mechanically stable and with symptoms having been present now for over 1-month, surgical intervention was felt to be futile in restoration of neurologic function and the patient was deemed a non-surgical candidate and referred to radiation oncology for palliative radiotherapy.



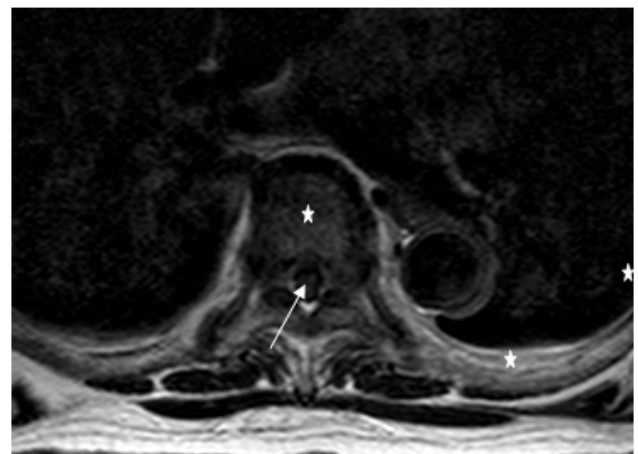
T6 vertebral body biconcave fracture deformity (star), with posterior retropulsion of the wall with spinal cord compression (arrow)

Figure 1A. MRI Thoracic Spine Sagittal T2



T6 vertebral body biconcave fracture deformity (star), with posterior retropulsion of the wall with spinal cord compression (arrow).

Figure 1B. MRI Thoracic Spine Sagittal STIR



T6 vertebral body, Arrow: Spinal cord compression due to posterior retropulsion of the vertebral wall with obliteration of CSF signal surrounding spinal cord

Figure 1C. MRI Thoracic Spine Axial T2

3. Discussion

Metastatic spinal cord compression (MSCC) is an oncologic emergency which can severely compromise the quality of life in cancer patients if not diagnosed or treated in a timely manner. It is well known that the most common primary tumors to metastasize to the spine are breast, lung, renal, and prostate tumors. A retrospective study in the UK with breast cancer patients at a single cancer center showed an incidence of 3% with first relapse of disease in bone [6]. The median time frame between diagnosis of breast cancer and development of cord compression or cauda equina syndrome was 42 months [6]. The most common presenting feature of MSCC is increasing back pain. Our patient exhibited early signs of

cord compression as nagging back pain that eventually became refractory to pain medications and resulted in permanent neurological damage which could have been aborted if there was no fear of COVID exposure.

Furthermore, outcomes of cancer patients with SARS-CoV-2 infection are poor. A report summarizing 72,314 cases from the Chinese Center for Disease Control and Prevention highlighted one of the first estimates of the probability of dying in infected cancer patients, with a mortality rate (28.6%) that is more than ten times higher than that reported in all COVID-19 patients in China [5]. Similarly, the percentage of patients being admitted to intensive care units requiring ventilation, or ultimately dying, was more than 4 times higher (39% compared to 8%) than in non-cancer patients [4]. Therefore, risk reduction strategies and management of cancer patients during this outbreak need serious consideration. It involves providing intensive attention to these patients with thorough surveillance or treatment and stronger personal protection provisions [4]. Similarly, having contingency plans are equally pivotal to handle oncologic emergencies in a timely manner during the crisis. It should be tailored to every patient's condition and every hospital's resources. A recent paper that reviewed epidemiological and clinical data of breast cancer patients in China and Italy suggests maintaining palliative radiotherapy for metastatic disease in patients with good performance status and prioritizing oral chemotherapy in the metastatic setting [7]. International group of radiation therapy practitioners in breast cancer recommend moderate hypofractionation for all breast/chest wall and nodal radiotherapy [8]. Moreover, reinforcing the environmental control for an effective triage of cancer patients by establishing a multidisciplinary incident command system is proposed in the recommendations in Journal of National Comprehensive Care Network (JNCCN) based on their experience in COVID epicenter institutions [9].

The fear of contracting the virus while seeking cancer-specific therapy has left a large number of cancer patients untreated. Therefore, a dynamic approach is needed for cancer patients so higher level of care in oncology is not jeopardized and possibly readily available simultaneously as we deal with SARS-CoV-2 infections in cancer patients.

4. Conclusion

This case illustrates the importance of having contingency plans within the health care system during epidemics/pandemics that clearly overwhelm our healthcare system, resulting in grave consequences for patients with various types of illnesses, particularly oncologic emergencies, which do not lend themselves to delays which other patients can afford to endure.

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