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Case Report

Coordinating pain control in newly diagnosed head/neck cancer: From a case report to a multi-disciplinary approach

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ABSTRACT

Over 1.6 million individuals will receive a new diagnosis of some form of cancer this year. Approximately 2.2% of these cancers will be related to the head and neck, and the vast majority (85%) of patients will present with initial symptoms of pain. Pain is one of the most feared symptoms of cancer, and up to 85% of patients report poorly controlled pain. This case describes the approach, treatment methods, and outcomes of a patient with newly diagnosed cancer, and how a multi-disciplinary model can be used and improved upon in order to successfully treat reported levels of pain. We concluded that the involvement of multiple medical professionals can be used to manage pain, and that communication, roles and feedback are key to successful therapy.

1. Introduction

Cancer has a major impact on society across all countries and ethnicities and is the second leading cause of death. Last year alone, over 1.6 million individuals were newly diagnosed with some form of cancer, with approximately 600,000 fatalities, and the incidence does not appear to be decreasing. Through television and advertisements, the public is familiar with the most common killers: colon, prostate, and breast. While these are often considered to be the “most popular” cancers, other less common cancers such as head and neck cancer (HNC) still affect an enormous population, all of whom share the major symptom of pain. HNC affects nearly 35,000 people in the United States annually,[1,2] in whom pain is reported in up to 85% at the time of diagnosis.[3,4]

Despite the many common symptoms of cancer that vary based on diagnosis, one of the most feared consequences of cancer is severe and uncontrolled pain.[5] In addition to overall discomfort, cancer pain causes a diminished quality of life, increases morbidity, worsens anxiety and depression and hinders performance status.[6–9] Treatment of pain is just as complex as the cause of pain itself. Combinations of oral and intravenous anti-inflammatory and opioid medications are typically scheduled with the hope of completely alleviating the symptom of pain. Nevertheless, roughly 45%–80% of all cancer patients report inadequate pain management.[10–12] This raises many questions about treatment, such as whether the medications are ineffective and whether the scheduling of medications is inappropriate. Other barriers to adequate pain management include the patients not reporting accurate pain levels,[13] current practices of pain treatment by providers,[14] and the reluctance to prescribe high doses of opioids.[15]

This case report describes the complexity of involving multiple healthcare providers to achieve a common goal and should be used as a stepping-stone in providing patient care with a multidisciplinary approach.

2. Case report

This patient was a 62-year-old gentleman who felt healthy prior to this presentation in the emergency department. He had a history of chronic obstructive pulmonary disease (COPD), severe pulmonary hypertension, obstructive sleep apnea, a significant past smoking history, and he was currently on 2.5 L of home oxygen therapy. He reported no problems with his activities of daily living despite his medical history and oxygen requirements.

He presented to our emergency department in the fall,

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complaining of headaches that had begun 1 year previously and worsened over the past 3 weeks. The headaches had started in the frontal region and seemingly progressed to involve the entire right side of his head with radiation into the neck. He reported that the headaches occasionally involved the entire head, and that this occurred more often as the headaches progressed. The pain associated with the headaches was rated a 10/10 at peak, lasting for several hours, with random intermittent relief during each episode. However, the symptoms did not wax and wane over the last several days and became more constant.

The worsening symptoms prompted him to visit the emergency department, where he was treated with hydrocodone-acetaminophen, diclofenac and cyclobenzaprine and was prescribed the same for home pain control. At that visit, he underwent a computed tomography (CT) scan of the head which showed no intracranial process, but a portion of the oropharynx showed an oral mass (Fig.1). He was then referred to our otolaryngology clinic for an outpatient follow-up visit and CT scan of the neck. He routinely took the prescribed medications every 4 hours with minimal relief for 4 days, until the headache pain became so intolerable that he returned to the emergency department.

Upon review of systems during the second emergency room visit, he denied any episodes of nausea, vomiting, photophobia or fever. He stated that he routinely had chills which were not new, and he reported the feeling of a swollen gland on the right side of his neck and continued to have right-sided anterior neck pain. Further questioning revealed increasing dysphagia to both solids and liquids for the past few weeks, and new mild odynophagia. His voice sounded muffled and “raspy” on examination, and he acknowledged the possibility of a slight worsening in the “rasp” that he attributed to worsening nasal congestion. His pain could not be controlled with ketorolac, and was minimally controlled with intravenous hydromorphone. He was then admitted for further pain control.

On hospital day #1, his pain continued to be rated as 9/10 and was treated with (regimen #1) hydrocodone 5 mg, acetaminophen 325 mg q6hrs prn (as needed), diclofenac 75 mg twice daily prn and hydromorphone 0.5 mg q1-2hrs prn by the primary team. This regimen was given for 1 day, and he was eventually given hydromorphone patient controlled analgesia (PCA) with a basal rate of 0.8 mcg/h with a 0.2 mcg bolus q10min with hydrocodone-acetaminophen 5 mg/325 mg q6hrs prn (regimen #2) for breakthrough pain on hospital day #2. He had significant relief with this new regimen, and reported a comfortable pain rating of 6/10 that was tolerable. During the day, the nursing staff noted that he was tired with occasional desaturation due to his oxygen mask falling off, but that he quickly regained appropriate saturation when repositioned. His medical chart indicated that he required 22 mg of hydromorphone, and that he pressed his PCA button more than 130 times over the course of the day. The hydromorphone PCA basal rate was decreased from 0.8 mcg/h to 0.5 mcg/h (regimen #3) which achieved pain control, again rated as 6/10.

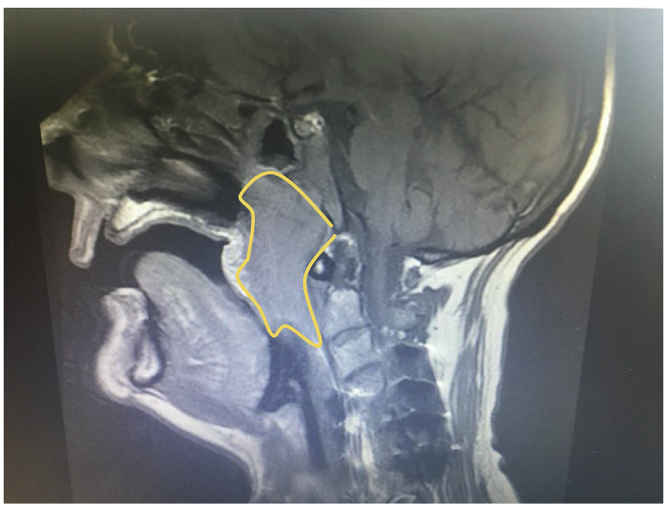

Fig. 1. Invading 6 × 6 cm nasopharyngeal mass from squamous cell carcinoma outlined in yellow.

Palliative care was then suggested to further assist with pain management to fit with the patients' goals of care. As per their recommendations, 30 mg TID (three times daily) extended release morphine orally (PO), with no basal rate PCA and hydromorphone via PCA as needed for breakthrough pain (regimen #4) was started to transition to oral medications and maintain longer acting pain control. The following morning, it was difficult to rouse him, requiring a sternal rub and he was noted to be sweating. Upon awakening, he was alert and oriented, answering all questions appropriately but exhibited myoclonus in the upper extremities.

Discussions with the palliative care and primary medical teams resulted in a reduction of his pain regimen, now consisting of (regimen #5) 15 mg TID extended release (ER) morphine and 7.5 mg Q4hrs prn instant release (IR) morphine orally with complete discontinuation of the PCA. This regimen controlled his pain throughout the day, consistently rated as a tolerable 6/10. Overnight he began to complain again of worsening head pain, requiring early doses of short acting morphine and additional diclofenac. His regimen was increased to (regimen #6) 30 mg TID ER morphine and 15 mg IR morphine Q4hrs prn. Due to the change in medication after the morning rounds, the pharmacy delayed the release of the medication. This combined with a delayed administration by the floor nursing staff caused his pain to be less controlled as the timing/scheduling of the medications had been disrupted. This ultimately led to an additional overnight stay in the hospital.

The morning of discharge, his pain was somewhat controlled, but still tolerable. Multiple biopsies of the 6 × 6 cm nasopharyngeal mass revealed squamous cell carcinoma, requiring treatment at our otolaryngology and radiation oncology services. The prolonged discharge that occurred due to delays in medication administration were unlikely to have affected the prognosis of his cancer, however, as radiation therapy can reduce symptoms and slow the advancement, the underlying cause of his symptoms remained untreated for an additional day causing pain and discomfort.

The patient benefitted from several different routes of medications, including scheduled intravenous medications, orals, PCA pump and a combination of two or more different routes. He rated his pain as 6/10 at times when he was clinically alert as well as somnolent, making pain scores difficult to correlate with medication titration. All calculated totals of opioids were converted into oral morphine equivalent doses for easier comparison.

Pain was uncontrolled with regimen #1, so that regimen #2 was initiated which controlled his pain by almost doubling the amount of morphine equivalent. Subsequent regimens decreased the total opioid dosage due to the clinical appearance of the patient. An attempt to further decrease the dose with regimen #5 was made but caused breakthrough pain during the night. His pain was then better controlled with regimen #6, which the patient continued after discharge. Refer to Fig. 2.

3. Discussion

As healthcare providers who swore an oath to do no harm, is it possible to look back on this case retrospectively and conclude that the patient improved with our interventions? Did prolonging

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