

# CASE STUDY

## A broad assessment of symptoms revealed an atypical presentation

The patient's symptoms suggested airway obstruction due to a hypopharyngeal tumor; however, imaging studies showed a mass in an unexpected location.

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### CASE

Mr. N. was a 45-year-old man with a history of end-stage renal disease (ESRD) receiving dialysis three times per week and had been a patient in the palliative care clinic for the past 2 years. He had gone to the trauma and emergency center (TEC) 3 days earlier after having passed out and reported dizziness and shortness of breath (SOB). Laboratory tests from the TEC visit included hemoglobin, 7.7 g/dL, a decrease from test results obtained 2 weeks earlier (9.9 g/dL); creatinine, 4.4 mg/dL, which was within normal limits for this patient; and D-dimer, 500 ng FEU/mL, which was deemed to be inconclusive because the patient had a bruise on his right rib cage area. He was given two units of packed blood red cells (RBCs) and discharged home with instructions to perform Hemoccult testing and to return to the palliative care clinic for follow-up.

Per instructions from the TEC, Mr. N. was at the palliative care clinic for the follow-up. His girlfriend of many years was with him because she had witnessed the fall on the day he presented to the TEC, and she was concerned about the syncopic episode. A subjective history revealed that Mr. N.

had sustained multiple falls during the past month. In describing three of the falls, Mr. N. reported experiencing a tunnellike sensation closing in on him and his windpipe “clamping off just before he went down.” His girlfriend reported noting that his lips were blue and he was gurgling. She dialed 9-1-1 and opened his airway. Mr. N. became responsive after paramedics arrived and administered oxygen.

Mr. N.'s social history included a 32-year history of smoking 1.5 packs of cigarettes per day and past alcohol addiction with no current use. Other past drug use included methamphetamines and hallucinogens. Mr. N. also reported increasing shortness of

breath, wheezing, chest pain, insomnia, confusion, constipation, mild edema in the lower extremities, and difficulty walking.

**Physical examination findings** included BP, 100/70 mm Hg; heart rate, 78 beats per minute and regular; oxygen saturation, 92% at rest and 90% with ambulation; and respiratory rate, 24 breaths per minute. Oral mucosa was dry, pink, and no masses were noted in the throat. No lymphadenopathy was noted. The patient was alert and oriented to person, place, and time, and mildly anxious with depressed affect. His skin was pale, he was cachectic, and appeared ill. Bilateral lower extremity edema was 2+. Cardiovascular rate and



**FIGURE 1.** Anteroposterior and lateral radiographs of the patient's neck

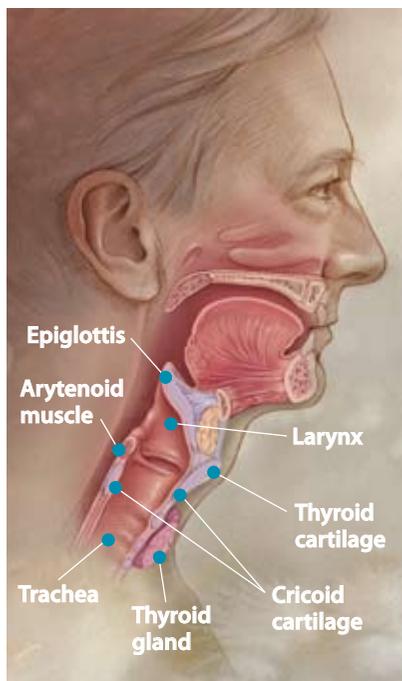
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rhythm was regular. Lung auscultation revealed an audible wheeze throughout with a high-pitched inspiratory and expiratory whistling sound. Abdomen was soft and nontender to palpation with positive bowel sounds. No clubbing or cyanosis of the extremities was noted. Repeat laboratory analysis revealed posttransfusion hemoglobin of 11.1 g/dL with no other significant changes in WBC count, creatinine, BUN, or electrolytes.

Radiography of the neck revealed soft tissue density in the supraglottic region (Figure 1). Computed tomography (CT) of the neck was recommended, and Mr. N. returned 3 days later for CT. Findings were concerning for a mass lesion that involved the left hemi-larynx with marked narrowing of the glottis airspace.

Mr. N. was advised of the CT findings and referred to the otolaryngology (ENT) clinic for consultation. Biopsy, obtained under direct visualization of the larynx, revealed squamous cell carcinoma (SCC) of the larynx. The patient subsequently underwent positron emission tomography (PET), and received a diagnosis of left larynx SCC with no metastatic disease.

**Mr. N. elected** to undergo treatment and was referred to oncology, where he was evaluated for radiation oncology and began treatment. He



**FIGURE 2.** Anatomy of the larynx

was not a candidate for chemotherapy because of poor performance status and comorbidities. Mr. N. was also referred to hematology for evaluation of his anemia.

Poor nutrition greatly impacted Mr. N.'s performance status. The radiation treatments caused mucositis and laryngitis, leaving him unable to ingest sufficient caloric intake to maintain his body weight and tolerate the radiation treatments. He consented to insertion

of a percutaneous endoscopic gastrostomy (PEG) tube and nutritional supplements (Nepro) were given via the PEG tube.

He was given an oral rinse-and-spit preparation for his mucositis; a radiotherapy mixture composed of Mylanta, diphenhydramine, and lidocaine viscous (Xylocaine Viscous) for his laryngitis; and, because he also developed dermatitis, a radiation relief cream (a compound of triamcinolone 0.1% cream, lidocaine 5% ointment, and silver sulfadiazine 1% cream). In addition, Mr. N. was given oxycodone (OxyContin) for acute pain management, 30 mg three times a day supplemented with one or two 5-mg tablets every 4 hours as needed.

Despite aggressive management of nutrition intake; mucosal, laryngeal, and dermatologic symptoms; and pain, Mr. N. became too weak to care for himself at home. He had a relapse in his sobriety and was consuming three vodka drinks a day and did not keep his appointment with hematology for evaluation of his anemia. Consequently, he was admitted to a skilled nursing facility, where he was able to maintain optimal nutritional management. He regained his strength through physical therapy. He also learned to manage his PEG tube feedings, received wound care and adequate pain control medications, and was in an environment in which he was not able to drink. After 1 month, Mr. N. was able to return home.

### TEACHING POINTS

This case reinforced two important nursing concepts.

#### Take a comprehensive history and perform a careful physical examination:

- Ask pointed questions to elicit a thorough patient history
- Interview the patient's family about syncope events
- Always consider the possibility of an atypical presentation. Mr. N.'s tumor was not found where his symptoms indicated it would be located.

#### Individualize care based on the patient's symptoms

- Continuously monitor the patient for adverse effects of treatment
- Initiate appropriate symptomatic care as indicated.

### DISCUSSION

In 2010, 12,720 cases of laryngeal cancer were diagnosed in the United States (10,110 in men and 2,610 in women).<sup>1</sup> Laryngeal cancer resulted in 3,600 deaths in 2010.<sup>1</sup> The most common type of laryngeal cancer is squamous cell carcinoma.<sup>2</sup> Treatment modalities include surgery, chemotherapy,

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and radiation therapy.<sup>2</sup> The increasing prevalence of this disease and its moderately high mortality rate emphasize the importance of understanding the relationship between anatomy of the larynx and how laryngeal cancer can manifest (Figure 2). Patient presentation and treatment management of laryngeal cancer is unique.<sup>2</sup>

The larynx aids in respiration, and its ciliated lining helps prevent foreign particles from entering the lower respiratory tract, humidifies and warms inspired air, protects the airway during swallowing, and allows for sound production (voice).<sup>3</sup> Breathing, swallowing, and speaking are controlled by intrinsic and extrinsic muscles in the larynx.<sup>3</sup>

The management of symptoms and treatment of laryngeal cancer is better understood with a review of the anatomy of the larynx.<sup>3</sup> The larynx, or voice box, is located in front of the pharynx, between the base of the tongue (epiglottis) and the trachea.<sup>3</sup> It is composed of nine pieces of cartilage including the thyroid cartilage; the cricoid cartilage; pairs of arytenoid, cuneiform, and corniculate cartilages; and the epiglottis.<sup>3</sup>

Heavy smoking and alcohol consumption are major risk factors for laryngeal cancer.<sup>4,5</sup> Early recognition of the signs and symptoms of laryngeal cancer can result in prompt diagnosis, and early initiation of treatment can reduce the burden of symptoms and have a positive impact on patient survival.

The patient's signs and symptoms can help identify the location of disease

**TABLE 1. Potential location of laryngeal tumor as indicated by symptom(s)<sup>1</sup>**

Location	Symptom(s)
Glottis <sup>a</sup>	Hoarseness for more than 2 wk
Hypopharynx	<ul style="list-style-type: none"> <li>• Breathing difficulty</li> <li>• Ear pain</li> <li>• Lump or mass in neck</li> <li>• Weight loss</li> </ul>
Subglottis	Pain and/or difficulty swallowing
Supraglottis <sup>b</sup>	<ul style="list-style-type: none"> <li>• Coughing</li> <li>• Sore throat</li> </ul>

<sup>a</sup> Follow-up of this symptom may lead to recognition and treatment at an early stage.  
<sup>b</sup> A tumor in this area does not usually cause hoarseness and is discovered at later stages of disease.

(Table 1). However, in the case discussed here, the patient presented with difficulty breathing and auscultatory changes that suggested airway obstruction. Although his presenting symptoms indicated disease in the hypopharynx, a broad assessment of his symptoms and thorough examination of the laryngeal area revealed a tumor in the supraglottic region, an atypical location for his symptoms.

### CONCLUSION

Quality of life for Mr. N. will be greatly impacted by the course of his disease and his continued response to treatment. A focus on managing his symptoms, including adequate nutrition support, contributed to his excellent response to treatment. In addition to the implemented symptom management, he should receive continued support and counseling

regarding treatment adherence, smoking cessation, alcohol abstinence, and wound and pain management. Mr. N. and his oncology care team should also discuss how aggressive he wants his care to be if the cancer does not respond to the radiation treatments. The ability of the medical and nursing staff to help Mr. N. manage his symptoms is vital to his success as he learns to manage his symptoms and live with laryngeal cancer. ■

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