

Recurrent head and neck cancer presenting as a large retroperitoneal mass

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Worldwide, head and neck cancers account for more than half a million cases annually and nearly 400,000 deaths.¹ Although the exact incidence of metastatic disease of these primarily squamous cell tumors is difficult to determine, the incidence is thought to be much lower than that of other solid tumors.² When the different sites of metastatic disease of these tumors have been studied previously, the most common have been (in descending order of frequency) the lungs, bones, liver, skin, mediastinum, and bone marrow.^{2,3} It is extremely rare area for head and neck squamous cell cancers to metastasize to the retroperitoneum. To our knowledge, only 2 other such cases have been reported in the literature.^{4,5} In those two cases, the metastatic recurrence occurred at 6 and 13 months after definitive treatment of the primary cancer.

Case presentation and summary

The patient in this case is a 60-year-old man with a history of stage IV moderately differentiated invasive squamous cell carcinoma (p16 negative, Bcl-2 negative, EGFR positive) of the hypopharynx that had been initially diagnosed in 2012. At that time, he underwent a total laryngectomy, partial pharyngectomy, and total thyroidectomy. A 2-centimeter mediastinal mass was also identified on a computed-tomography scan of the thorax and resected during the initial curative surgery. Final surgical pathology on the primary hypopharyngeal tumor revealed a 4.1-cm moderately differentiated squamous cell carcinoma with negative margins, but positive lymphovascular invasion (Figure 1). The 2-cm mediastinal mass also revealed the same squamous cell carcinoma as the hypopharyngeal primary. Final surgical margins were negative.

The patient went on to receive adjuvant treatment

in the form of concurrent chemoradiation with cisplatin (100 mg/m² every 21 days for 3 doses, with 70 Gy of radiation]. After his initial treatment, he was followed closely by a multidisciplinary team, including otolaryngology, radiation oncology, and medical oncology specialists. He underwent a positron-emission tomography-CT scan 1 year after the conclusion of adjuvant therapy that showed no evidence of local or distant disease. The patient underwent 12 fiberoptic pharyngoscopy procedures over the course of 4 years without any evidence of local disease recurrence. He underwent a CT scan of the neck in October of 2016 without any evidence of local disease recurrence.

In early 2017, the patient presented with fatigue, abdominal pain, and back pain during the previous month. CT imaging revealed a left retroperitoneal mass of 8.8 x 4.0 x 6.6 cm, with bony destruction of L3-L4 causing left hydronephrosis (Figure 2 and Figure 3). Other staging work-up and imaging did not reveal any other distant disease or locoregional disease recurrence in the head and neck. Lab work was significant for an acute kidney injury that was likely secondary to mass effect from the tumor.

The mass was biopsied, with pathology revealing squamous cell carcinoma consistent with metastatic, recurrent disease from the previously known head and neck primary, and it was also p16 negative, Bcl-2 negative, and EGFR positive (Figure 4). After a multidisciplinary discussion it was determined that the best front-line treatment option would be to treat with definitive concurrent chemoradiation. However, due to the size and location of the mass, it was not possible to deliver an effective therapeutic dose of radiation without unacceptable toxicity to the adjacent structures. Therefore, palliative systemic therapy was the only option. These

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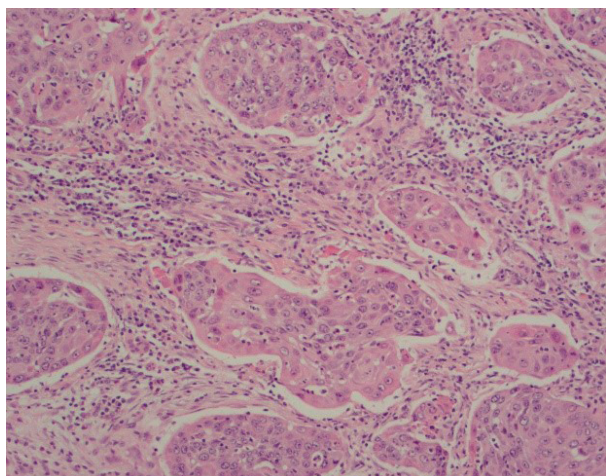


FIGURE 1 The original squamous cell carcinoma, showing invasive hypopharyngeal squamous cell carcinoma (H&E stain, 400x). Reproduced with permission from the Department of Pathology at the University of Texas Medical Branch.

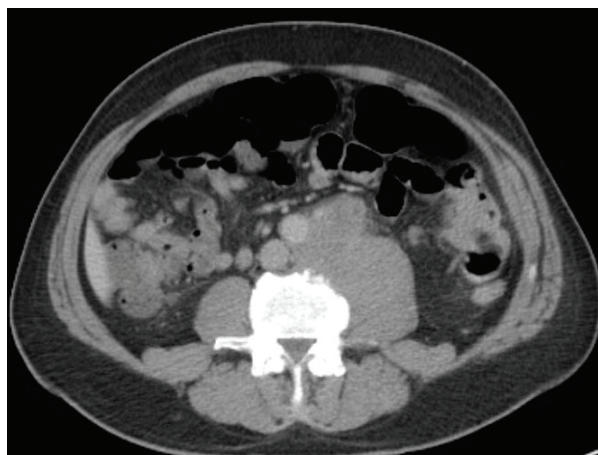


FIGURE 2 A computed-tomography scan, transverse view, showing a large left retroperitoneal mass of 8.8 x 4.0 x 6.6 cm.



FIGURE 3 A computed-tomography scan, coronal view, show the left retroperitoneal mass, with mass effect on adjacent structure.

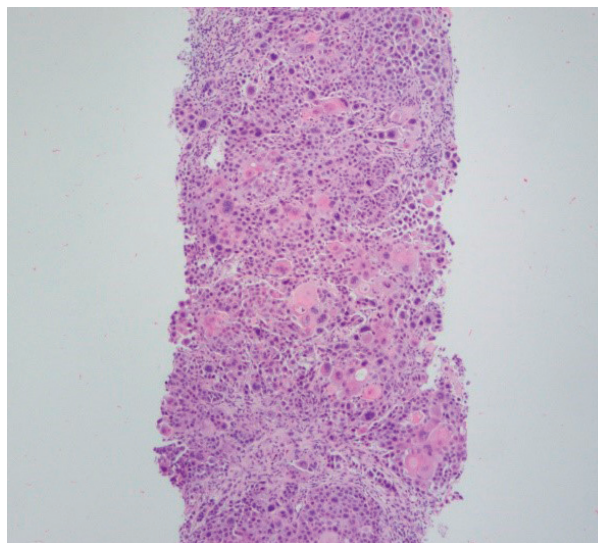


FIGURE 4 Metastatic recurrent squamous cell carcinoma from the retroperitoneal mass (H&E stain, 200x). Reproduced with permission from the Department of Pathology at the University of Texas Medical Branch.

treatment options, including systemic chemotherapy and immunotherapy, were discussed with the patient. However, he did not want to pursue any further cancer treatment and wanted instead to focus on palliation (pain control, antiemetics and nephrostomy to relieve obstruction) and hospice. He passed away 3 months later.

Discussion

Masses of the retroperitoneum have a wide differential diagnosis.⁶ Primary malignancies including lymphomas, sarcomas, neurogenic tumors, and germ cell tumors may all present primarily as retroperitoneal masses.^{6,7}

Nonmalignant processes such as retroperitoneal fibrosis may also present in this manner.⁷ Certain tumors are known to metastasize to the retroperitoneum, namely carcinomas of the gastrointestinal tract and ovary as well as lung cancer or melanoma.^{5,8} Some primary retroperitoneal masses in women have been described in the literature as being HPV-associated squamous cell cancers of unknown primaries.⁹

When head and neck cancers metastasize they typically metastasize to the lungs, bone, liver, mediastinum, skin, and bone marrow. Most metastasis is pulmonary in origin, with the literature indicating it accounts for 52%-66% of head

and neck cancer metastases, with bone metastases next in frequency at 12%–22%.^{2,3,10} In general, the incidence of distant metastatic disease in head and neck cancers is not as common as its other solid tumor counterparts, and even metastasis to other lymph node groups other than locoregional cervical nodes is rare.¹¹ Furthermore, late metastasis occurring more than 2 years after definitive treatment is also an infrequent occurrence.¹²

When discussing distant metastatic disease in head and neck cancer, previous literature has described an increasing likelihood of distant metastases when there is locoregional disease recurrence.¹³ Moreover, the retroperitoneum is an exceedingly rare site of distant metastatic disease for head and neck cancer. There have been only 2 previous cases that have described this phenomenon, and in both cases the metastases occurred within or close to 1 year of definitive locoregional treatment.^{4,5}

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Conclusion

We present our case to present an exceedingly rare case of distant metastatic, recurrent disease from head and neck cancer to the retroperitoneum (without locoregional recurrence) that occurred 4 years after definitive treatment. We believe this to be the first case of its kind to be described when taking into consideration the site of metastases, when the metastatic recurrence occurred and that it happened without loco-regional disease recurrence. This case highlights the importance of keeping a wide differential diagnosis when encountering a retroperitoneal mass in a patient with even a remote history of head and neck cancer.

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