Pathology Case Quiz 2

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An 86-year-old woman presented with a few months' history of progressive fullness in the right side of her face along with localized discomfort in her right maxillary region. She denied any trauma, nasal obstruction, diplopia, neurologic deficits, dysphagia, odynophagia, voice changes, weight loss, cough, pulmonary symptoms, fever, or chills. She also denied any history of tobacco or alcohol use but did report a history of hypertension, narcolepsy, and previous orthopedic procedures. The results of her clinical examination were remarkable for bone loss in the region of the anterior hard palate and the bilateral premaxilla. However, no masses or mucosal lesions were detected during the rest of the head and neck examination.

Facial computed tomography revealed a contrast-enhancing soft-tissue mass involving the right anterior paramedian maxilla and the anterior maxillary alveolar ridge, with evidence of bone destruction of the adjacent maxilla and invasion into the right nasal passage and the right maxillary sinus (**Figure 1** and **Figure 2**). Hematoxylin-eosin staining of incisional biopsy specimens, which were obtained through a sinusotomy, demonstrated sheets of small blue cells (**Figure 3**). Further staining with CD20 revealed immunoreactivity only among a subpopulation of cells within the samples. Many nonstained small blue cells were also evident in the samples (**Figure 4**). Other immunohistochemical stains were positive for CD79a, CD3, and CD45RO. The specimen was negative for Epstein-Barr virus on in situ hybridization.

What is your diagnosis?

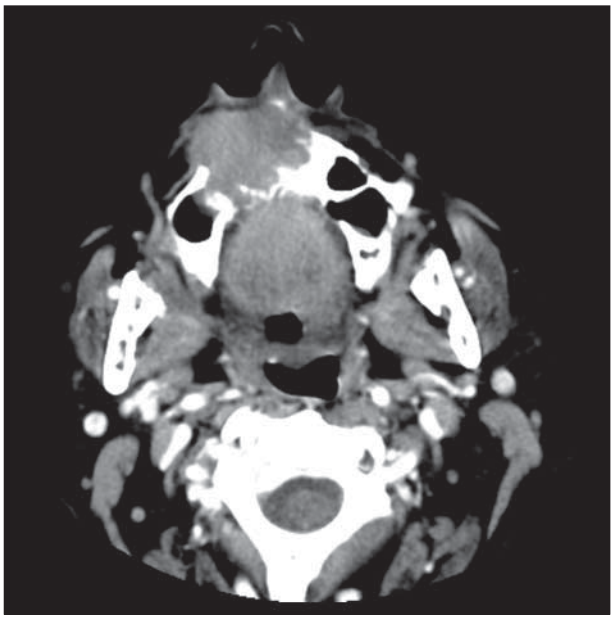

Figure 1.

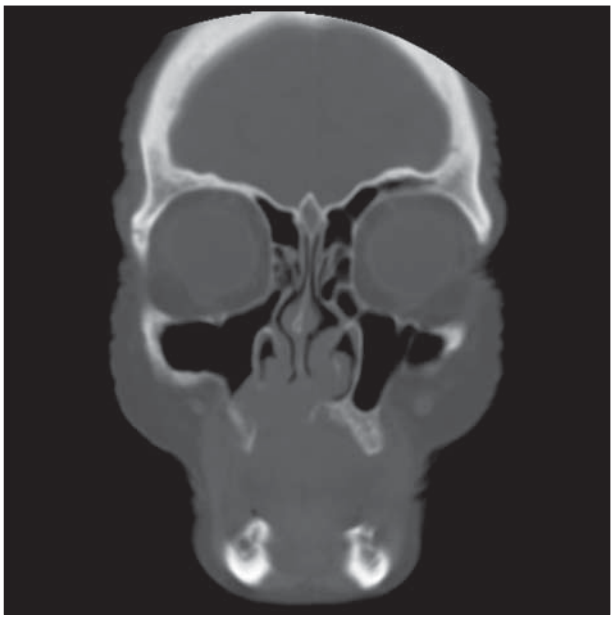

Figure 2.

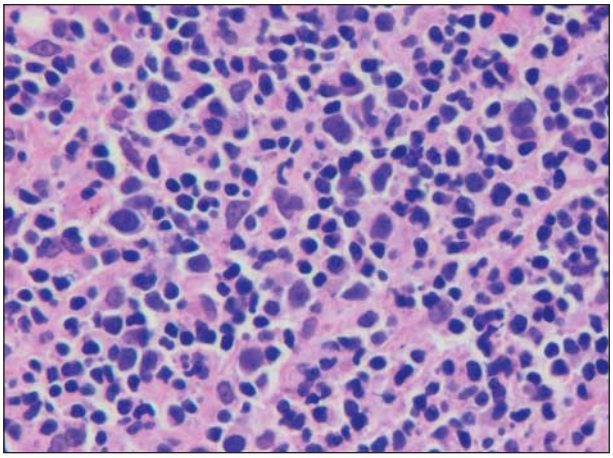

Figure 3.

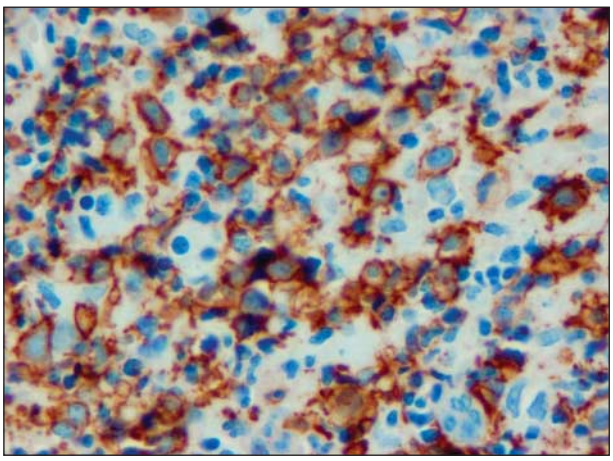

Figure 4.

focal OPC often has a favorable prognosis. However, diffuse multifocal or recurrent disease is always difficult to excise completely and is therefore associated with a higher probability of recurrence.[1,3] Oncocytic papillary cystadenoma of the larynx is considered a diffuse process that requires adequate surgical excision and warrants frequent follow-up for timely identification of recurrence.

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Pathology Quiz Case 2: Diagnosis

Diagnosis: Diffuse large B-cell lymphoma, T-cell/histiocyte-rich morphological variant, of the hard palate

Malignant lymphoma accounts for up to 5% of all malignant neoplasms of the head and neck.[1] Although most cases present with cervical adenopathy, approximately 13% of cases present with extranodal head and neck disease.[2] The most common extranodal site is composed of the structures of the Waldeyer ring, with less frequent locations including the nose, paranasal sinuses, salivary glands, larynx, thyroid, and conjuntiva.[2] Historically, reports of lymphoma presenting primarily as a hard palate lesion have been exceedingly rare.[3] This scarcity of cases in the literature is possibly a result of nomenclature that has disguised this entity behind terms such as *lethal midline granuloma*, *polymorphic reticulosis*, *lymphomatoid granulomatosis*, and *midline malignant reticulosis*. Currently, many of these diagnoses are thought to represent some form of a lymphomatous lesion and are most likely consistent with extranodal NK/T-cell lymphoma, nasal type.[1,4,5]

In the more recent literature, a number of cases have emerged describing primary lesions of the palate that are consistent with some form of lymphoma. Although most extranodal lymphomas in the head and neck have proved to be of B-cell origin, NK/T-cell lymphoma is reported to be the most common subtype that presents in the palate.[1,6] Other subtypes of lymphomas that have previously been reported in the palate include mucosa-associated lymphoid tissue (MALT), Burkitt lymphoma, plasmablastic lymphoma, and lymphomatoid granulomatosis.[5,7,8] A review of the current English-language literature regarding malignant neoplasms of the head and neck, however, failed to yield any report of a diffuse large B-cell lymphoma, T-cell/histiocyte-rich morphological variant, presenting primarily as a hard palate lesion.

The T-cell/histiocyte-rich variant of B-cell lymphoma is a rare form of diffuse large B-cell lymphoma that classically presents around the fourth decade of life and shows a predilection for males.[9] This entity tends to present in extranodal sites more often than its large B-cell counterparts. Also, some articles suggest that the T-cell/histiocyte-rich variant has more frequently infiltrated the spleen, liver, and bone at the time of presentation, with some authors reporting such involvement in up to 60% of cases.[9] This possibly accounts for the fact that patients with the T-cell/histiocyte-rich variant often develop the "B" symptoms of malignancy, which include unexplained fever, weight loss, and night sweats.

The T-cell/histiocyte-rich morphological variant of diffuse large B-cell lymphoma has been histologically characterized by the World Health Organization as less than 10% large neoplastic B cells among a prominent inflammatory infiltrate, most of which are small polyclonal T cells, with or without the presence of histiocytes.[9] Immunohistochemically, the malignant B cells will stain positive for CD45 and CD20. Also, the background T cells will stain positive for CD3 and CD45RO. The associated inflammatory response accounts for the presence of neutrophils, eosinophils, and plasma cells within the specimen. It is important to note, however, that making the correct histologic diagnosis of diffuse large B-cell lymphoma, T-cell/histiocyte-rich morphological variant, can be challenging because its microscopic characteristics often mimic those of other lymphoproliferative disorders.

The T-cell/histiocyte-rich morphological variant of diffuse large B-cell lymphoma must be differentiated from other potential lymphoproliferative pathogenetic factors because the treatment and, subsequently, the prognosis can be quite variable among these varying diagnoses. In fact, in cases of misdiagnosis in which this variant of diffuse large B-cell lymphoma has been treated as Hodgkin or low-grade non-Hodgkin lymphoma, the patients have been reported to do poorly.[9] Furthermore, unlike large B-cell lymphoma, nasal-type extranodal NK/T-cell lymphoma can be treated with radiation therapy but also carries a worse prognosis.[4]

Lymphomatoid granulomatosis can also mimic diffuse large B-cell lymphoma histologically but tends to exhibit an angiocentric, angiodestructive polymorphous inflammatory infiltrate as well as variable positivity of B cells for Epstein-Barr virus.[10] Clinically, lymphomatoid granulomatosis typically involves the lungs. In fact, in the only reported case of this condition in the oral cavity, the patient had a 2-year history of lung involvement.[10] The treatment and prognosis for lymphomatoid granulomatosis differ depending on its severity. Also, this entity must be differentiated from the T-cell/histiocyte-rich morphological variant of diffuse large B-cell lymphoma so that accurate prognoses and the most effective treatment protocols can be determined.

The rarity of the T-cell/histiocyte rich-variant of diffuse large B-cell lymphoma likely contributes to the lack of published data regarding its treatment. It is thought, however, that this lesion should be treated like any similarly staged diffuse large B-cell lymphoma in that the treatment regimen would include anthracycline-containing chemotherapy such as CHOP (cyclophosphamide, doxorubicin, vincristine, and prednisone), with the possible addition of the anti-CD20 monoclonal antibody rituximab.[9] Complete response rates to such treatment and the 5-year survival rate after a CHOP-like regimen both tend to be centered around 60%.[9]

In the present case, lymphoma was not initially suspected because of the location of the lesion. The incisional biopsy specimens were obtained with the patient under general anesthesia, and intraoperative frozen sections yielded the diagnosis of lymphoma. Once the diagnosis was established, the sinusotomy incision was closed primarily and the procedure was ended. Chemotherapy treatment is currently being administered by the medical oncology service. However, the patient will need continued follow-up with a head and neck surgeon to monitor for treatment failure or disease recurrence.

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Submissions

Residents and fellows in otolaryngology are invited to submit quiz cases for this section and to write letters to the *Archives* commenting on cases presented. Quiz cases should follow the patterns established. See Instructions for Authors (http://archotol.ama-assn.org/misc/ifora.dtl).

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