

Burkitt's Lymphoma (of the jaw bones)

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Overview

Burkitt's lymphoma (of the jaw bones) is one of the fastest growing tumors, "tumor-doubling time is very short (about 25 hours), patients present rapidly growing tumor masses and often have signs of rapid tumor turnover with high serum lactate dehydrogenase (LDH) concentration and elevated uric acid" (Dozzo et al.). Burkitt's lymphoma is divided into 3 clinical forms: endemic, sporadic, and immunodeficiency associated. The endemic form is seen in children and affects the jawbone in 50% of cases, altering either one or both sides of the face (De Coninck et al.). Burkitt's lymphoma has been found in malarial prevalent areas in Africa. It has also been linked to the Epstein-barr virus, first discovered in a piece of lymphoma tissue by Epstein, a pathologist. It has a high prognosis with chemotherapy and has unique histological traits that separate it from other bone tumors.

Etiology

The etiology of Burkitt's lymphoma is linked to the Epstein-barr virus and neoplastic B-cells. Malaria has also been shown to increase the "risk of endemic burkitt's lymphoma through the interactions with EBV-infected B cells" (Molyneux).

Clinical Presentation

Clinically, Burkitt's lymphoma of the jaw bones presents as a large swelling in the mandible area or maxillary area, asymmetrical face, intraorally a well circumscribed mass in the posterior area of the mandible, rapidly growing mass, patient may also have abdominal involvement. The patient with Burkitt's lymphoma of the jaw bones may experience pain.

Demographic

The demographic of Burkitt's lymphoma of the jaw bones has an age range of 5-7 years, predominant in young males, regions most prominent are in "equatorial Africa, Brazil, and Papua New Guinea...The so-called Burkitt's lymphoma belt stretches across central Africa 15° either side of the equator where the climate is hot and wet (more than 50 cm annual rainfall). The epidemiological maps of malaria and Burkitt's lymphoma overlap" (Molyneux).

Biopsy / Histology / Radiographs

An excision biopsy would be acquired from the mass. The histological features we would find are B cell lymphocytes with EBV (Epstein-barr virus) in the nuclei of these cells. Histologically, a starry sky appearance is what differentiates Burkitt's lymphoma from other bone tumors. The radiographic features that would be found are multiple radiolucency's that may merge to form a large radiolucent area in the cortical bone.

Differential Diagnosis

There are three forms of Burkitt's lymphoma. Burkitt's lymphoma of the jaw bones can be confused with the sporadic form because of the identical histological traits, such as the starry sky appearance. However, in the sporadic form of Burkitt's lymphoma, clinically, it is different

from the one associated with the jaw since it rarely appears in that location. It may also be confused with “Metastatic neuroblastoma, Ewing's tumor, rhabdomyosarcoma, osteolytic osteosarcoma, and other NHL lymphomas/leukemia...” (De Coninck et al.).

Treatment

Burkitt's lymphoma treatment of choice is chemotherapy. Burkitt's lymphoma cells are highly sensitive to chemotherapy that no surgical resection or radiation therapy is required (De Coninck et al.). Surgical treatment may be used if the patient desires for personal comfort.

Prognosis

The prognosis of Burkitt's lymphoma without treatment is fatal. However, the prognosis for early mid stage with chemotherapy is 97%-98%. While the prognosis for high stage Burkitt's lymphoma is 87.3% (De Coninck et al.). The overall survival rate with chemotherapy is 75%-95% (Kuo et al.).

Professional Relevance

Burkitt's lymphoma is relevant to me, as a dental hygienist, because this tumor is linked to a specific location in the world, Africa. It may also be seen in other countries near the equator and with similar climates. While it may be rare to find a case of Burkitt's lymphoma of the jaws in the United States, acquiring knowledge of Burkitt's lymphoma has made me want to share what I learned with others. It is comforting to know that it has a very high prognosis and that there is chemotherapy treatment that can remove it. Radiographically the multilocular radiolucency's may confuse us with another type of bone tumor but connecting the clinical and histological features really makes Burkitt's lymphoma stand out. It is also relevant to dental hygienist because of the antineoplastic treatment the patient will be taking. During that time their

oral hygiene may be compromised so before they start treatment it would be best for the patient to visit their hygienist for a dental cleaning and to provide them proper toothbrushes and mouth rinses.

Citations

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