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Commentary

Kummoona Jaw Lymphoma, Pathogenesis and Therapy

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Abstract

Cancer a dreadful, miserable and disastrous disease, usually lethal disease to children. Most of our cases were expecting death during discovery in the early seventy of the last centuries.

Kummoona jaw lymphoma is a particular clinical-pathological entity affecting children between the ages of 2-8 years, mean (5 years). Twenty-nine cases were reported,17male and 12 females.

It is a rapid growth, tumors associated with high temperature, anemia with high ESR. Patients look very ill and toxic. Patients passes through series of depilating status.

These types of cancer usually affecting the low socioeconomic groups of people.

Pathogenesis of the disease, tumors developed in the odontogenic tissue in the cancellous bones of children jaws by oncogenic virus.

The virus does not belong to EBV of Burkitt's Lymphoma but by herps like virus invasion. The majority of our patients died and only 3 children survived of Stage I and stage II with death rates 93.3%.

Tumors presented as rapid growth; the tumors with fleshy and friable tissues with bleeding tendency and showed bleeding spots on surface of mucosa with floating teeth.

Keywords: Kummoona; Jaw; Lymphoma; Pathogenesis; Therapy

Introduction

Site of Tumors

These tumors were located in the premolar molar teeth region, affecting one side or both sides of the maxilla or mandible and some cases showed both upper jaw and lower jaw involved by tumor, with early metastasis to the viscera or brain [1-5].

Staging of the disease into 4 stages

- Stage I, tumors involve one quadrant of maxilla or mandible
- Stage II, tumors involve both jaws upper or lower jaws either by one or two quadrants
- Stage III, jaw tumor with extension to brain
- Stage IV, jaw tumor with visceral metastasis

Research in Kummoona jaw lymphoma was carried and extended to 4 decades to understand this peculiar tumor and to discover the etiology and to find proper therapeutic managements.

To differentiate between Kummoona jaw lymphoma and Burkitt's Lymphoma. Ouer tumor, effect patients were older in age and their physical status better than our children. Duration of the disease much longer and the therapy much easier by single type of therapy. Our tumors effecting very small children, their disease very aggressive and fetal within very short period.

Oncogenic viruses, are substantial cause of cancer such as EBV virus causing Burkitt's lymphoma and nasopharyngeal carcinoma.

Herps like virus causing Kummoona Jaw Lymphoma. It was found an association between herpetic papilloma virus with oral cancer.

HIV of AIDS can Couse leukoplakia as precancerous white lesion and end to oral cancer, also Kaposi sarcoma was associated with HIV.

Infected cases and human papilloma virus (HPV) particularly type 16, it's a known factor of oral cancer. HPV 18 is the same virus responsible for cervical cancer. It's the most common sexually transmitted infection in US.

Cancer might associate with infected chronic hyperplastic candidiasis and syphilis in second stage. Spicy food like chili induces submucous fibrosis as precancerous stage usually end to oral cancer.

There is substantial cause by cancer by the effect of smoking with consumption of alcohol, hereditary and genetic and depleted uranium should not to be excluded.

Investigations

Radiological examination including, chest x-ray to exclude metastasis and mediastinal involvement.

Ultra-sound and CT scan was recommended to the liver, abdomen and other viscera. Liver function test. Kidney for serum creatinine and blood urea. By CT scan to exclude visceral metastasis, of Para-aortic, retroperitoneal and mesenteric lymph nodes. Overy, kidney and other organs.

Serological studies

The serological studies characterized by increase of anti-body titers to Epstein Barr Nuclear Antigen (EBNA), early antigen (EA) and virus capsid antigen (VCA).

In some other cases, the profile was relatively high with EBV associated Burkitt's lymphoma but the presence of low anti EA and negative anti EBNA, did not allow a definite conclusion to be made.

Histopathological studies

These include cytological studies, light microscope with (H&E), ground section and Electron microscopy.

Imprint cytology

A quick technique by Gamesa stain for diagnosis of Kummoona jaw lymphoma.

The slide showed a sheet of lymphoblastic cell lymphoma, darkly stained due to high ribonucleic acid with vacuoles in between contains lipid.

Light microscope studies by (H and E)

The histopathological studies by H and E, showing starry sky appearance of uniform lymphoid cells exhibiting intense cytoplasmic pyronin Philla.

Ground section

Plastic section technique was used showing lymphoblastic lymphoma. The cytoplasm with darkly stained due to high ribonucleic acid content. The cytoplasm rim showed tiny vacuoles visibly belong to fat droplet seen with fat stain.

Apoptotic changes of lymphoblastic cells were also seen.

Electron microscopy

The general features of Kummoona jaw lymphoma. The cell is oval or round or elongated cell with high nucleus cytoplasmic ratio with invagination or cleft in the nuclear membrane.

Chromatin clumps aggregated around nuclear membrane. The mitochondria are not well developed and showed marked swelling. Cytoplasmic processes were observed as assign of apoptosis. Some cell showing double nuclei or convoluted shape.

Virus-like structure was seen in the nucleus and cytoplasm. Vacuole's seen due to high content of lipid.

Massive amount of collagen fibers with rough endoplasmic reticulum was partially dilated with some loosing ribosome.

Postmortem studies

The jaws were consisting from extensive growth of fleshy friable tissue with bleeding spot on the surface mucosa and the teeth were floating easily dislodged due to massive destruction of alveolar bones.

Gross anatomy of the viscera showed extensive masses involved the terminal ilium and para-aortic and mesenteric lymph nodes.

Future challenges

Resent study by (M Perrone 2024) to demonstrate how mesenchymal stem cell therapy played a role in managements of oral cancer. This author introduces a novel approach to treat with reconstructing oral cancer by engineering stem cells. She mentioned that mesenchymal stem cells (MSCs), hold the potential to regenerate oral tissue, enhance the effectiveness of immunotherapy and target cancer cells with greater precision.

Therapy of Kummoona Jaw Lymphoma

From our clinical studies we found the fallowing therapeutic regimen were effective, the therapy uses an intra venous combination of Vincristine 1.5mg/m^2, Adriamycin 50mg/m^2, Cyclophosphamide 1000mg/m^2, Methotrexate 10mg/m^2 and Prisolone 50mg/m^2.

This regimen was applied in 8 doses and the duration of therapeutic managements was extended to 20 weeks.

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