Case Report

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Burkitts Lymphoma

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Abstract

Introduction: Burkitt lymphoma is a type of non-hodgkin lymphoma that causes cancer in immune cells called B cells. Recognized as a rapidly growing human tumor. The female 12 year child admitted in AVBR hospital on date 18/05/2020. As father said, child was completely asymptomatic and apparently alright prior to onset of symptoms, child has a palpable painless soft tissue mass on left midaxillary line. 10–15 days prior to hospitalization she developed fever but it relieved by medications. Also have complaints of breathlessness since 5 to 10 days and retrosternal chest pain since 5-10 days. A detailed clinical evaluation is made based on patient, cytological examination, computed topography scan imaging of chest, ultrasound and CSF examination are used as diagnostic technique. If the condition is detected early, treatment of Burkitts lymphoma is more effective. The use of intensive chemotherapy and radiation therapy are useful.[1]

Keyword: B-cell; Burkitts lymphoma; Jaw; Non-Hodgkin's lymphoma; Tumor.

INTRODUCTION

Lymphomas are the heterogeneous group of lympho proliferative malignancies resulting from clonal expansion of tumour cells derived from B, T or NK cells A majority of them are derived from B lymphocytes.[2] Lymphomas are primary tumours of lymph cells called lymphocytes, a type of WBCs Lymphomas is the most founded cancer in infants. Burkitt lymphoma is a type of non-Hodgkin lymphoma in which cancer occurs in immune cells called B cells. Recognized as a fast growing human tumor, Burkitt lymphoma has compromised immunity and is become dangerous if is not treated quickly.[3] Burkitt lymphoma (BL) is not an inherited condition. While Burkitt lymphoma is Along with genetic modifications affecting the MYC gene and immunoglobulin genes (genes that provide guidance for antibodies), these genetic variations are acquired (not inherited) and restricted to cancer cells.[4]

Incidence: The age adjusted incidence rate for men and women in India are 2.9/100,000 and 1.5/1000,000 respectively.[5]

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OBJECTIVE

1. To know general idea about the condition of the disease.
2. Exploring knowledge of pharmacology, management of medicine and nursing.

PATIENT INFORMATION

Patient history

The 12-year-old female child patient admitted to AVBRH on 18/05/2020 As narrated by the father, child was completely asymptomatic and apparently alright prior to onset of symptoms; child has a palpable painless soft tissue mass on left midaxillary line but parents shown negligence towards it. 10–15 days prior to hospitalization she developed fever which was of intermittent type and relieved by medications. Patient also have an complaints of breathlessness since 5 to 10 days and retrosternal chest pain since 5-10 days. There was no significant background history. There was no other family history of meaning After all examinations such as complete blood count, kidney function test, CEST chest, Pleural effusion cytology, USG, FNAC etc was done when patient admitted to the hospital.

Causes

Burkitts lymphoma reacts in male and female about three times. The endemic type is related to malaria and the Epstein-Barr virus (EBV), Also glandular fever is cause y a widespread virus. For sporadic form the cause is less, sometimes it is along with infection with EBV.

Clinical Finding

Important signs of Burkitts lymphoma include soft tissue mass along with jaw and any other facial bone includes, cervical lymph node swells, abdominal masse and abnormal buildup o fluid in abdomen. Swallon, painless lymph nodes in neck, armpit and groin also early loosening of child's molar and premolar. Intra abdominal tumors may present.[6]

Investigations: Studies found that haemoglobin concentration was 9.6 gm percent, MCH count was 26.2 picogm, Total RBC was 3.26, HCT count was 26.1 which was decreased than normal. Kidney function test was done which was normal. CECT Chest was performed and it showed multiple enlarged discrete homogenously enhancing lymph node are noted in bilaterally axillary region measuring 27mm*18mm in size. Moderate rigjht pleural effusion with fissural extension. Mild pericardial pleural effusion predominantly along left heart border and around apex. Pleural fluid cytology also done smear show occasional lymphocytes especially of small type along with few polymorph splash macrophages and smudged nuclei in blood mixed within proteinous background. Cytology suggest blood mixed serous effusion with low infiltrate of small lymphocytes. 2-D echo cardiography was done it show moderate pericardial effusion. Ultrasonography of left axilla show the lymphadenopathy was present.

TREATMENT

Medical Management

Treatment of burkitt lymphoma was is most effective with early diagnosis of the condition. There are specific recovery aproches, as well. It can be treated with intensive intravenous therapy. Commonly drugs ar use cyclophosphamide, vincristine, prednisone, doxorubicin. Chemotherapy and radiation therapy for superior vena cava obstruction or paraspinal compression are helpful in treating child with burkitts lymphoma.[7]

Surgical Management

For intraoral masses incisional biopsy has been peformed. Stratified squamous epithelium with a sub epithelial tumor consisting of uniform dysplastic cells arranged in thin stroma sheet shows in histopathological studies. The lymphocytes were round and large with scarce cytoplasm's and increased nuclear to cytoplasmic ratios.[8]

Nursing Management

The nurse is responsible for prescribing the medications and determining their positive and negative effects on the patient. The type and dosage of the pharmacologic treatment is determined by the combination of these effects. Nursing management focuses on managing the problems lymphoma and side effect of chemotherapy.[9]

Assessment

- Assess general condition of the patient.
- Assess the breathing pattern of the patient for rate rhythm as well as pulse.
- Assess the severity of pain and give the

divisional therapy.

- Identify the problems they having in treatment.
- Give health education regarding condition, medication, treatment and prognosis.
- Identify the psychosocial need and help them to cope up.[10]

- **Prevention from infections**

Following measures must be taken to prevent infection:

- Broad spectrum antibiotics are used prophylactically.
- Fever is an sign ofinfection, so if fever occurs blood, urine, stool and nasopharyngeal cultures are done to identify the cause and site of infection.
- An adequate protein and calorie intake.
- provides the child with better host defences against infection.

Management of the side effects of chemotherapy:

- **Nausea and vomiting**

for mild to moderate

. vomiting antiemetic like promethazine, chlorpromazine etc. are used

. Metaclopramide is administered for severe vomiting.

. Antiemetics should be given before chemotherapy is started (30 minutes too 1 hour before chemotherapy) and then regularly at two hours interval up to 24 hours.

- **Anorexia**

. Loss of appetite occurs because of chemotherapy and radiation therapy to:

. Give small frequent feeds to the child according to her likes.

. Give and easily digestible food to the child.

. Serve the food in an attractive manner.

- **Neuropathy**

. Vincristine and Vinblastin can cause various neurotoxic effects leading to foot drop, weakness and numbness of extremities and reduce bowel movements. So:

. Use food rest to prevent food drop in the bed ridden children.

. The children used to suffers from constipation. Regular bowel movement should be ensured by using stool softeners and laxatives. Also fluid intake must be increased.

- **Alopecia**

. Hair loss occur because of chemotherapy.

. Inform the parents and child about this side effect earlier.

. Encourage the parents to purchase a wig for child before hair fall occurs.

. Child's hair should be cut short and she/ he should be made to wear surgical cap to collect fallen hair.

. Parents and child should be reassured that hair will grow again after the treatment stops.

- **Mood changes**

. Shortly afterstarting steroid therapy, children experience mood changes which range from feeling of well-being and euphoria to depression and irritability.

. Parents should be made aware of these behaviour changes.

- **Parental support and guidance**

. Nurses should continually guide, support and help parents to adjust to this disease condition.

. Parents should encouraged to express their feeling, fear, grief and concerns.

. Provide emotional support to the parents continuously.

Nursing Diagnosis: The key diagnosis Patients with burkitt lymphoma can be marked on the basis of assessment results.

1. Ineffective breathing pattern related to decreased lung expansion.
2. Retrosternal pain related to mediastinal lymphadenopathy.
3. Altered nutritional pattern less than body requirement related to consequences of chemotherapy (anorexia, gastric irritation, taste distortion, nausea).
4. Risk of fluid volume deficit related to impaired intake of fluid.
5. Risk of infection related to inadequate secondary defense and immunosuppressin. E.g bone marrow suppression (dose limiting side effect of chemotherapy and radiation.

6. Risk for altered mucus membranes related to side effect of some chemotherapeutic agent.
7. Risk of altered family process related to situational/transitional crisis (long term illness, change in roles/economic status).

EXPECTED OUTCOMES OF THE PATIENT

Expected outcomes of patients may include:

1. Ineffective breathing pattern associated with decreased lung enlargement

Expected Outcome

- Patients should maintain an efficient breathing pattern, signs of rapid shallow breathing at normal rate and depth, and absence of shortness in breathing.
- The client will be establish the respiratory rate within limits.

2. Retrosternal pain related to mediastinal lymphadenopathy

Expected outcome:

- The pain will be minimized and patient will feel relaxed and comfortable.

3. Altered dietary pattern Lower than the necessity of the body linked to Chemotherapy symptoms (anorexia, gastric pain, taste disturbance, nausea)

Expected Outcome

- The normal nutritional pattern will be maintained

4.Risk of infection due to insufficient secondary protection and immunosuppression. For example suppression of bone marrow (dose limiting side effect of chemotherapy and radiation

Expected outcome

- The patient will be maintain temperature and achieve healing as soon as possible.
- Identification of risk and participating in prevention of infection.

5. Risk of altered mucus membranes due to side effects of some chemotherapy agent.

Expected outcome

- Present intact mucous membranes that are white, moist, and free from inflammation / ulceration.
- Give the demonstration of different techniques to maintain/restore integrity of oral mucosa.
- The normal skin integrity of the mucus membrane will be maintained.

Continuing Care: Patient reference can help the patient handle the transition from hospital to home. The nurse at Home assesses the success of the patient at home and the way the family progresses and patients cope with chemotherapy and radiation therapy. The nurse reinforces the concerns that the patient or the family may not have asked Before the patient is back at home and is traying to Establish new rules trends in study.

Collaborative Probles/Potential Complications[11]

In the basis of the evaluation results, following this can include possible complications:

- Tumour related complication
  - SVC syndrome
  - Spinal cord compression
  - Pleural cord compression
  - Airway/Pharyngeal obstruction
- Metabolic Complication
  - Tumour lysis
  - Syndrome of inappropriate antidiuretic harmone secretion
  - Hypo/Hyperglycemia
- Gastrointestinal complication
  - Bleeding and obstruction
- Heamatological complication
  - Bone marrow infiltration
  - Pancytopenia

DISCUSSION

Burkitt lymphoma (BL) is common in sub-Saharan Africa (SSA). In high income countries, BL is highly curable with chemotherapy.

However, there are few prospective studies from SSA describing non pediatric BL and no regional standard of care. Thirty five participants age 15 years or older with newly diagnosed BL were enrolled in Malawi from 2013 to 2018. Chemotherapy was administered according to institutional guidelines, with concurrent antiretroviral therapy if HIV infected. Median age was 21 years (range, 15-61) and 15 participants (43%) were HIV infected. Twenty seven participants (77%) had stage III to IV disease, and 19 (54%) had Eastern Cooperative Oncology Group performance status >1. Among HIV infected participants, median CD4 count was 130 (range, 29-605) and 10 (67%) had suppressed HIV viral load. Four participants (11%) died before receiving chemotherapy. First line chemotherapy consisted of: cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP) [n = 22 (71%)]; infusionaletoposide, prednisolone, vincristine, cyclophosphamide, and doxorubicin [n = 4 (13%)]; high dose methotrexate based chemotherapy [n = 4 (13%)]; and rituximab plus CHOP [n = 1 (3%)]. Among 28 evaluable participants, 14 (50%) achieved a complete response. Median overall survival (OS) was 7 months; 1-year OS was 40% [95% confidence interval (CI), 24%-56%]. Sixteen (73%) of 22 deaths were a result of disease progression. Compared with CHOP, more intensive chemotherapy was associated with decreased mortality (hazard ratio, 0.24; 95% CI, 0.05-1.02; P = .05). This is among the best characterized prospective cohorts of nonpediatric BL in SSA. Most deaths resulted from progressive BL. Patients who received more intensive therapy seemed to have better outcomes.[12]

Informed Consent:

The patients and their family have been given details before taking this case and the patient and their families have received informed consent.

CONCLUSION

Burkitt's lymphoma is not common, fast moving childhood malignant tumor with varying clinical sign and symptoms. It is not common in Indian population dissuade the doctors from using it as part of the differential condition. The value of strong opinion of the clinician for the diagnosis of the disease as early as possible. This condition is an outstanding example of the value of early diagnosis and appropriate care, which has proved to be life-saving for the child.

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