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Purulent Pleurisy Revealing Lymphoblastic Lymphoma Type T: A Pediatric Case Report

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Abstract

Lymphoma is a very common cancer in the pediatric population, and its modes of revelation are very variable. Case report: A 7-year-old patient was admitted for purulent pleurisy, whose cytological study of the pleural fluid isolated lymphoblastic cells in favor of a T-type lymphoblastic lymphoma, a very rare mode of revelation in current practice. Conclusion: Pediatric lymphoma takes on different aspects, and it is important to look for it systematically in order to ensure adequate management.

Keywords

Pleural Effusion, Pleural Puncture, Cytology, T Lymphoma

1. Introduction

Lymphoblastic lymphomas represent 25% to 30% of childhood NML.

T lymphoblastic lymphomas, the most frequent (80% of lymphoblastic lymphomas) lymphoblastic lymphomas), develop mainly at the thymic level (at the level of the thorax), and therefore have mediastinal symptomatology: signs of compression, with breathlessness dry cough, edema of the upper part of the body due to the compression of the vessels. More rarely the diagnosis is evoked in front of isolated cervical adenopathies, a tumor in the ENT sphere.

The treatment is carried out according to the same modalities as for acute lymphoblastic leukemia, with a cure rate of 80%.

It is exclusively composed of chemotherapy. Relapses are rare, local or disseminated (bone marrow, meninges) and occur most often during treatment.

The treatment consists of an intensive polychemotherapy which lasts about 6

months and is completed by maintenance treatment, for a total duration of treatment of 2 years. The main active drugs are cyclophosphamide, corticoids, methotrexate methotrexate, etoposide, aracytin, ifosfamide, and doxorubicin.

Studies are currently underway to identify risk factors for relapse, to propose a relapse, and in order to propose a more intensive treatment for the patients most at risk [1] [2].

2. Purpose

We report an unusual case of a patient with purulent pleurisy revealing T-cell lymphoblastic lymphoma.

3. Observation

Patient aged 7 years, admitted to the department of pediatrics A CHU Mohammed VI Marrakech Morocco for right chest pain with altered general condition evolving for 20 days in a context of fever quantified at 40˚C, the clinical examination has objectified a syndrome of right fluid effusion, a respiratory rate at 55 cycle min, a heart rate at 95 beats per minute, an oxygen saturation at 98%, with context of altered general condition, weight at 16 kg and height at 112 cm.

The abdominal examination did not reveal any abnormality, in particular no hepatomegaly or splenomegaly, no adenopathy on examination of the lymph nodes.

Chest radiography showed a watery opacity in the right hemichamber.

A thoracic ultrasound showed a large anechoic right pleural effusion with multiple septa as shown in the Figure 1.

A pleural puncture showed a purulent fluid with lymphocytic predominance, white blood cells 13,120 per mm^3, lymphocytes 70%, neutrophils 30%, protides 48.9 gl with sterile culture.

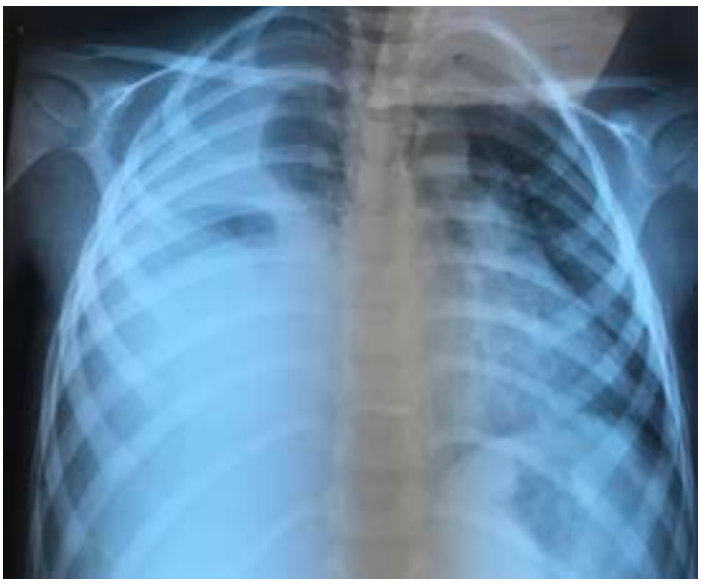

Figure 1. Frontal chest X-ray.

Cytology for malignant cells in the pleural fluid isolated lymphoblastic cells in favor of a T-cell lymphoma.

As part of the extension work-up, a lumbar puncture and a myelogram did not reveal any infiltration by abnormal cells.

A thoracoabdomino-pelvic CT scan revealed a large right pleural effusion, latero-cervical and intra-peritoneal cystic formations with peritoneal adenopathies associated with suspicious-looking bone lesions, Figure 2 and Figure 3.

The diagnosis was purulent pleurisy revealing a stage III T lymphoma.

Patient was transferred to the pediatric oncology department put on a 2009 LMT chemotherapy protocol.

The patient has progressed well on chemotherapy, currently under clinical supervision.

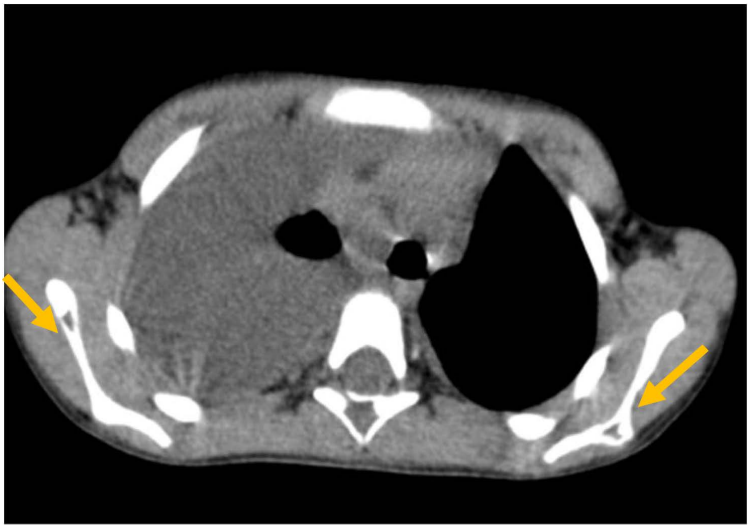

Figure 2. Overt bone lysis.

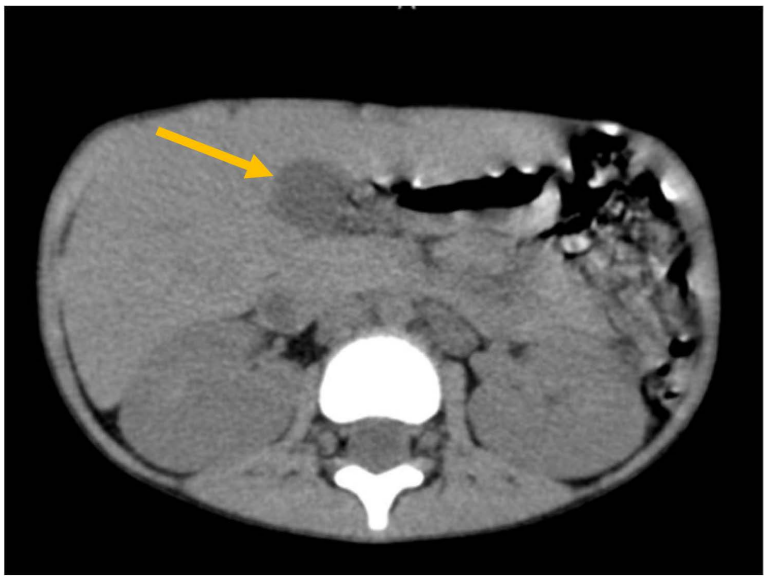

Figure 3. Peritoneal adenopathies.

4. Discussion

Lymphoblastic lymphomas (LBL), common in adolescents, are aggressive lymphomas that arise from immature precursors (lymphoblasts) of the B and T cell lineages. They usually occur in the mediastinal (T-LBL), lymph node or extra-lymph node (B-LBL) region and are often accompanied by bone marrow involvement already at the time of diagnosis. The term "lymphoma" is used for masses with minimal blood or bone marrow dissemination. The term "lymphoma" is used when the bone marrow invasion by blast cells is greater than 25%.

The majority of lymphoblastic lymphomas are derived from T-cell precursors (80% - 90%), the others are derived from B-cell precursors.

The T-cell receptor-associated molecules, CD3 and CD7, are by definition expressed in T-LBL, but so are CD1a, CD2, CD4, and CD8, depending on the stage of maturity of the T-cell precursors, from which the lymphoma has developed [3] [4].

Adolescents and young adults (AYA) with T-LBL most commonly present with an anterior mediastinal mass arising from the thymus, which may cause airway compression or superior vena cava syndrome and is frequently accompanied by pleural or pericardial effusions. Symptoms include shortness of breath, cough, stridor, dyspnea, and acute respiratory distress. Neck and facial edema and jugular venous distension should raise suspicion of superior vena cava syndrome. This was not the case in our patient, in whom the mode of presentation was dyspnea, fever, and altered general condition.

Most patients with T-LBL have disseminated disease (Murphy stage III or IV). Approximately 15% - 20% of patients have bone marrow (BM) infiltration. Less than 5% have central nervous system (CNS) involvement [5].

It has been reported that pleural effusion in lymphoma may emerge from the results of various mechanisms, such as impaired lymphatic drainage due to mediastinal lymph node or thoracic duct obstruction, pleural or pulmonary infiltration by the tumor, venous obstruction, pulmonary infection, or radiation therapy [6] [7]. In which case, lymphatic obstruction is the most common factor in pleural effusion. Serous effusions are a frequent complication of lymphoma. Santos *et al.* [8] reported 256 serous effusions associated with lymphoma, 197 of which were pleural. Das *et al.* [9] reported that the effusion caused by lymphoma was unilateral in 15 cases and bilateral in 6 cases. Our patient presented with a purulent right pleural effusion which we explained by superinfection of the pleural fluid making this presentation unusual in current practice.

5. Conclusion

Through our clinical observation, we insist that the diversity of the clinical presentation of lymphoma in children requires systematically looking for it in front of any suspicious pleurisy in order to guarantee early management.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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