Unusual multiple metastatic localisations in adult Burkitt's lymphoma. A case report.

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Abstract

Burkitt's lymphoma is an aggressive B-cell non-Hodgkin lymphoma. It is less common in adults accounting for less than 5% of non-Hodgkin lymphoma cases. Radiological methods (ultrasonography, computed tomography) are indispensable for the initial evaluation and appreciation of organ extension; complete diagnosis is confirmed by the histopathological examination. We present the clinical case and ultrasound imaging particularities of a young patient diagnosed with multisystem involvement Burkitt's lymphoma, with rapid progressive evolution towards exitus.

Keywords: Burkitt lymphoma, ultrasound, multiple metastases

Introduction

Burkitt's lymphoma is a B-cell non-Hodgkin lymphoma (NHL) responsible for 1-5% of NHL cases, with an incidence in adults of 2.5 cases to a million (sporadic form) every year [1]. It is the human tumor with the fastest growth rate, with a cell doubling time of 24-48 hours [2]. Clinically, it often shows abdominal involvement, which affect the stomach, distal ileum, and cecum; it may also attack the mesentery, kidneys, testicles, ovaries, breasts, bone marrow, and the central nervous system (CNS) [4]. Tumor lysis syndrome is a rare complication that can occur either spontaneously or following a chemotherapy treatment. The diagnosis is established through biopsy, using histopathological and immunohistochemical findings [3] ("starry sky" pattern, high proliferation index, Ki-67+), together with cytogenetic analysis (c-myc gene translocation on chromosome 8) [4].

We present the case of a young man with systemic involvement and tumor lysis syndrome Burkitt lymphoma in which US had a major contribution to the diagnosis and the evaluation of the multi-system involvement.

Case report

A 38 year-old patient, without medical history, was admitted with severe abdominal pain, anorexia, significant weight loss, asthenia, and heavy sweating, symptoms that started suddenly one month before the admission. Clinical examination revealed an alteration in the general condition, pale teguments, small, mobile, non-painful lymph nodes bilateral laterocervical and sub-mandibular, significant hepatomegaly, intense pain on deep palpation of epigastrium and hypochondrium. Laboratory examinations revealed accelerated erythrocytes sedimentation rate (45mm/h), slight anaemia (Hb=12.8g/dl), elevated **lactate dehydrogenase** (891U/l), hyperuricemia (17.3mg/dl), and hypoproteinaemia (5.9g/dl). Abdominal ultrasound revealed hepatomegaly with diffuse tumoral infiltration appearance of the visceral face of the left hepatic lobe; a hypoechoic round tumoral mass located in the gallbladder wall (fig 1a); inhomogeneous, hypoechoic tumoral masses in both adrenal gland measuring 11/6 cm and 7.5/5 cm, respectively (ultrasound-guided biopsy on the left adrenal mass was performed) (fig 1b);

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Fig 1.

an ileal loop with circumferential parietal thickening of up to 12-13 mm, with at least 10 cm length accompanied by a huge infiltration of the adjacent mesentery, round lymph nodes (of neoplastic type), and a small amount of ascites (fig 1c). Thoracic US showed bilateral pleural effusion with significant thickening of the parietal pleura, with nodular appearance suggestive of pleural metastasis (fig 1d). The thoraco-abdominal computer tomography (CT) scan confirmed the findings described by US. At colonoscopy with combined ileoscopy, a tight stenosis with pseudonodular aspect of the mucous membrane in the terminal ileum was found without malignancy in the histopathological examination. The upper endoscopy revealed a 4/5 cm exulcerated infiltrating tumor in stomach (fig 1e) and in the second part of the duodenum multiple round polypoid tumors, exulcerated at the top (fig 1f). Histological examination from the biopsied tissue (adrenal, stomach, and duodenum) confirmed Burkitt's lymphoma. Specific chemotherapy was initiated but the evolution was rapidly unfavourable with the decease of the patient two weeks after diagnosis.

Discussions

Burkitt's lymphoma is a rare, highly aggressive B cell tumor, three distinct forms being described: endemic, sporadic, and immunodeficiency associated. Our patient developed the sporadic form of the illness, this being more frequent in children, in adults representing under 1% of NHL cases [5]. Due to the aggressivity of the disease, early diagnosis is essential; imaging methods (US, CT) are recommended for the initial evaluation of the total tumor mass, for the assessment of vital organs involvement, for guiding invasive techniques to obtain a tissue sample for histological diagnosis and for monitoring the patients throughout the therapy [4].

The abdominal digestive extranodal involvement (terminal ileum, cecum, and appendix) is common in Burkitt's lymphoma, due to the richness of the lymphoid

tissue at this level, while the involvement of the upper gastrointestinal tract, as we have found in our patient, is rare [6]. The adrenal glands and pleural/pulmonary involvement is not current. In the literature only two cases of BL with secondary adrenal glands and pleural/pulmonary involvement were reported [7]. Another impressive aspect, and largely uncommon, is the size of the metastatic dissemination with concurring gallbladder, liver, and peritoneum (aside from pleura and adrenal gland). The US appearance of the gallbladder involvement for BL is similar to that of acute cholecystitis (irregular circumferential parietal thickening with flow presence in Doppler colour exam) [8]; while our patient displayed individualised nodular mass at gallbladder wall level. The secondary lymphatic invasion of the peritoneum is usually associated with the primary gastrointestinal involvement, as was the case for our patient [10].

In the case presented here the US had a crucial role in: raising suspicion of lymphoma, orienting the subsequent diagnosis examinations (endoscopic examinations), and guided biopsy from the adrenal tumor which allowed the BL diagnosis. The CT scan, although considered a superior radiological method to US, did not add any additional diagnosis information other than revealing the lymphatic invasion of the peritoneum.

The particularity of this case is the scarcity of this form of NHL and the multisystem involvement (including digestive, pleural, pulmonary, adrenal glands, and CNS). The US was a major contribution to diagnosis (both in B mode and interventional US guided biopsy).

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