A RARE CASE OF HODGKIN’S LYMPHOMA OF THE MEDIASTINUM IMITATING RETROSTERNAL GOITER – RETROSPECTIVE ANALYSIS OF THE DIAGNOSTIC PROCESS

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Primary extranodal sites of development of lymphoid neoplasms are rare and concern about 5% of patients with Hodgkin’s lymphoma. Extranodal development is more common in non-Hodgkin’s lymphoma and may reach up to 33% (1). It is thought that extranodal occurrence is in fact a disseminated process and is frequently diagnosed as secondary.

The most frequently encountered histological types are the ones derivateing from B lymphocytes: subtype B – DLBLC large cells and follicular lymphoma (2). The neoplastic changes can be detected by CT or MRI, but those imaging techniques can not discriminate the type of the tumor. Nevertheless, CT is the standard exam for patients suspected of lymphoma (3).

However, the best method of imaging and finding rudimental changes is the PET-CT scan (4, 5, 6).

Histopathological analysis of surgical biopsy of the pathological tissue is sufficient examination to confirm the lymphoma and its variants in case of extra nodal disease (7). Histopathological subtypes may have influence on the choice of the type of therapy (8).

In the paper we present a case of mediastinal lymphoma imitating retrosternal goiter.
CASE REPORT

A 27-year-old patient was diagnosed by a cardiologist for a short breath. On the physical examination no other abnormalities were observed. Echocardiography, performed by cardiologist, revealed a large tumor, overlaying the right ventricle and compressing the pulmonary trunk. A large tumor of the superior and anterior mediastinum appeared in chest X-ray. CT scan confirmed the above diagnosis and the tumor was described as hypodensic (fig. 1). The pathological mass was thought to be a part of the thyroid gland, descending to the superior mediastinum and compressing the superior mediastinal vessels. Several lymph nodes up to 20 mm diameter were observed in the paratracheal region. There were no signs of adenopathy in the cranial, cervical region. In ultrasound scan the right lobe was of proper size with no nodules. The left lobe size was 39x34x80 mm and its pole, containing hypoechoic non-homogenic nodule with septules, was slightly descending retrosternally. The trachea was pushed to the right. Ultrasound–guided fine needle aspiration (FNA) of the nodule enabled obtaining 30 ml of clear, lucid fluid. Cytology revealed mostly protein masses and macrophages.

Scintigraphy of the neck and thorax showed accumulation of the marker in the properly placed but enlarged thyroid gland. Iodine uptake in the neck region was within normal limits and it did not show the presence of retrosternal goiter.

Because of short breath and compression symptoms the patient was qualified for surgical treatment. Due to clinical symptoms the patient underwent cervicotomy and sternotomy. Intraoperative findings revealed a normal thyroid gland with large tumor of the anterior mediastinum, pushing into the neck and – a thymoma was suspected (fig. 2).

The histopathological exam of the tumor revealed Hodgkin Lymphoma of the mediastinum (classical subtype NS-1). Immunofenotype of the Reed-Sternberg (RS) and Hodgkin (H) cells: CD30+, CD15+ in single cells, LCA-, EMA-, CD43-, CD20+ in single cells, CKMNFP+ in thymic cells, but negative in RS and H cells.

Following the surgery, chemotherapy and radiotherapy were instituted. Neck and mediastinal lymph nodes were irradiated by X6MV

![Fig. 1. Contrast – enhanced CT scan of the neck and chest – massive hypodensic lesion of the anterior mediastinum, compressing the superior mediastinal vessels](image1)

![Fig. 2. The tumor of the mediastinum after its removal (size 12 x 12 x 5 cm), visible specimen with three large tumors](image2)
Hodkin’s lymphoma of the mediastinum imitating retrosternal goiter

rays with 30-60 Gy and raised doses up to 36 Gy applied on residual changes divided into 1.8 Gy fractions.

After the chemo- and radiotherapy were completed, a positron emission tomography (PET-CT) was done to evaluate residual changes on the neck and upper mediastinum. The exam did not show any kind of nonphysiological radiomarker’s accumulation in the monitored regions of the body. The patient did not show any signs of recurrence in three years follow-up.

DISCUSSION

Lymphoma of the thyroid is a rare malignancy. A typical clinical appearance of this disease includes: rapidly growing tumor accompanied by symptoms of compression of neighboring structures such as dysphagia, short breath and hoarseness. When tumors enlarge, the trachea might be pushed to the side and compressed as well as the veins of the neck (9, 10). These symptoms are usually present in lymphomas developing from the thyroid, but in this case mediastinal lymphoma imitated retrosternal goiter with dominating sign of short breath. The echocardiography and radiography strongly suggested retrosternal goiter, additionally confirmed by CT.

Ultrasound imaging of the thyroid gland, a golden standard in thyroid diagnostic algorithm, seemed to confirm the afore mentioned diagnosis. One of the basic indications for ultrasound of thyroid is estimation of its size, however, ultrasound is not recommended for imaging of retrosternal goiter, because of the wave’s bone absorption. FNA, a key examination in thyroid pathologies diagnostic algorithm, proved noncontributory.

Most of the papers report that preoperative FNA biopsy is a standard procedure with 70% of accuracy (11, 12). However, negative or non-diagnostic FNA does not exclude malignancy (13, 14).

CT and MRI are valuable methods of visualizing retrosternal goiters and tumors of the thoracic cavity. The above mentioned exams allow evaluating precisely the tumor location in relation to the surrounding structures of the neck and chest, and whether it originates from the thyroid gland (3-6). Accordingly patients with anterior mediastinal mass pose a diagnostic challenge. Differential diagnoses include lymphoma, thymoma, substernal thyroid mass, teratoma, germinal tumor benign cyst of thymus or simple hyperplasia (15). It should be highlighted that even such a precise technique as multilayer CT did not exclude retrosternal goiter, in fact it suggested a connection between this pathological mass and the left lobe of the thyroid gland.

The exam with the highest negative predictive value in preoperative diagnostic in analyzed patient, was scintigraphy. It is of primary importance that in analyzed case, only on the basis of this exam a retrosternal goiter might have been excluded. The superiority of this exam is the result of organ-specific binding of the used radiomarkers, moreover this technique is more accessible and less expensive then PET-scan. The final diagnosis was established on the basis of histopathological exam of the postoperative samples which revealed Hodgkin lymphoma.

The analysis of diagnostics in presented patient demonstrates the difficulties that may be encountered in such cases as well as proves how important it is to apply the most accurate methods in describing such pathologies. It must be emphasized that the patient’s prognosis relies mostly on early and accurate diagnosis.

CONCLUSIONS

1. Scintigraphy of the thyroid gland is an accurate, accessible and inexpensive method that should be included in case of any doubts in preoperative evaluation of retrosternal tumors.
2. Hodgkin’s lymphoma of mediastinum is a rare entity which should be included in the differential diagnosis of retrosternal mass, especially in young patients
3. Establishing preoperative diagnosis of Hodgkin’s lymphoma poses major problems and the final diagnosis can be formulated only after histopathological and immunohistochemical exam of the postoperative samples.
REFERENCES


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