Left supraclavicular Lymphadenopathy as initial presentation of prostate Adenocarcinoma: An unusual presentation of a common cancer

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Abstract

Left supraclavicular lymphadenopathy is an ominous finding of physical examination. An underlying malignancy is found in about 50% of cases. This case report describes a male patient admitted for acute heart failure and respiratory infection. During physical examination a large left supraclavicular mass was identified. There were no symptoms or other findings suggesting malignancy. A full body Computed Tomography (CT) scan imaging revealed generalized lymphadenopathy. The histopathological examination of a cervical lymphadenopathy suggested metastasis of a poorly differentiated carcinoma. Prostate specific antigen level was very high (325 µg/L). The digital rectal examination and prostate biopsy confirmed the diagnosis of prostate adenocarcinoma. Even though this is an uncommon presentation of a very frequent disease, finding a supraclavicular lymphadenopathy in male patients should raise the suspicion of metastatic prostate cancer.

Introduction

Left supraclavicular lymphadenopathy is a suspicious finding on physical examination, as an underlying malignancy can be found in 50% of cases, especially in patients over 40 years old. Typically, lung cancer, gastrointestinal cancer or lymphoproliferative disease are identified [1].

Prostate cancer is the most frequent cancer diagnosed in European men. Metastatic prostate cancer usually involves the bones, regional lymph nodes, brain, liver and lung [2]. Supraclavicular lymph node metastasis from prostate cancer are extremely rare, with a reported rate of 0.4% to 1% of cases [3].

We report the case of a patient with prostate adenocarcinoma diagnosed after presenting with a left supraclavicular lymphadenopathy.

Case Presentation

A 66-year-old man with a history of alcoholism and active smoking was admitted with acute heart failure triggered by a lower respiratory infection. Diagnosis upon admission was hypertensive cardiac disease with mildly reduced left ventricle ejection fraction and de novo atrial fibrillation, thus starting anticoagulation therapy. No genitourinary symptoms or weight loss were reported. During physical examination, a large left supraclavicular mass was identified. A full body computed tomography (CT) scan was performed, showing cervical, thoracic, abdominal and pelvic lymphadenopathies (Figure 1A, 1B) without any other suspicious malignant lesions.
A digital rectal examination revealed a hard prostate gland and serum level of the prostate specific antigen (PSA) was elevated (325 µg/L, (reference values: 4.1 - 5.4 µg/L). An transrectal ultrasound was performed showing an enlarged and homogeneous prostate gland with a right peripheral hypoechochogenic nodule, measuring 21 mm. An excisional biopsy of the supraclavicular lymph node was performed as well. Histopathologic examination revealed malignant cells consistent with metastasis of a poorly differentiated carcinoma and an immunohistochemical profile of negative Citokeratin 7 and Citokeratin 20. The immunohistochemical antibody stain of the lymph node tissue was negative for PSA but positive for NKX3.1 antigen.

During hospitalization the patient suffered an acute ischemic stroke whilst on therapeutic anticoagulation therapy, indicating an underlying prothrombotic state. A transrectal prostate biopsy was performed but the overall health of the patient worsened rapidly. After a few days of clinical deterioration, the patient died. The prostate biopsy confirmed the diagnosis of prostatic adenocarcinoma (Gleason 4+5).

**Discussion**

Prostate cancer is the most frequent cancer in men over 50 years old, with a relatively good prognosis when diagnosed in early stages [4]. Supraclavicular lymphadenopathy discovered during physical examination in a malignant setting most frequently represents metastasis from a primary cancer of the lung, oral cavity or upper gastrointestinal tract (Table 1) [5-6].

Dissemination of the prostate cancer occurs locally, through lymphatic or hematogenous spreading [7], with bone metastasis representing the most frequent presentation of metastatic disease [8]. Lymphatic spreading to cervical region occurs in less than 1% of the cases and it is even more rare as the initial presentation of prostate cancer [9].

Cited from [10].

Prostate cancer is commonly asymptomatic but symptomatic disease usually implies worse prognosis. Patients admitted for cardiovascular and respiratory causes rarely undergo digital rectal examination, especially if they do not report genitourinary symptoms. Nevertheless, finding a supraclavicular lymphadenopathy should lead us to search for an underlying malignancy, which involves careful history taking, a complete physical examination as well as imaging techniques. The digital rectal examination, PSA serum levels and CT scan are accessible methods that can be helpful. To achieve a diagnosis, excisional or aspiration biopsy of the lymph nodes with immunohistochemistry study of the sample is especially important [11].

In this patient, we found an abnormal digital rectal examination and a very high serum PSA level. The lymph node biopsy showed the immunohistochemical profile of negative Citokeratin 7 and Citokeratin 20, found in prostate carcinoma [12], and the immunohistochemistry stain was

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**Table 1: Metastatic origins of supraclavicular lymphadenopathy**

<table>
<thead>
<tr>
<th>Primary tumor</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Lung</td>
<td>40%</td>
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<tr>
<td>Nasopharyngeal</td>
<td>18%</td>
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<tr>
<td>Stomach</td>
<td>8%</td>
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<tr>
<td>Breast</td>
<td>5%</td>
</tr>
<tr>
<td>Hepatocellular</td>
<td>2%</td>
</tr>
<tr>
<td>Unknown</td>
<td>27%</td>
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negative for PSA and positive for NKX3.1, a highly sensitive marker for prostate cancer [13]. Even though it is a sensitive and specific marker, the PSA stain can be negative in a small percentage of poorly differentiated carcinomas. All these findings pointed to metastatic prostate cancer, as was later confirmed.

Vinjamoori, et al. published a study with 620 prostate cancer patients, 82 of them having atypical metastatic sites. They concluded that lungs, pleura and liver were the more prevalent among the atypical sites followed by supradiaphragmatic lymph nodes and adrenal glands. Only 11 of 620 the patients had supraclavicular involvement [14]. Saitoh et al. found that only 5 of 1367 patients of the patients with prostate cancer at autopsy had metastases to the cervical lymph nodes [15]. As similar reports have noted, [16] this review of 10 cases published in literature of prostate cancer with cervical lymph node involvement and a similar presentation, only one had a PSA negative stain of the lymph node, as it was the case in our patient.

All these reports show that involvement of the supraclavicular lymph node is atypical in prostate cancer and even more unusual as the initial presentation. Although uncommon, a left supraclavicular lymphadenopathy in older men should include prostate cancer among the differential diagnoses [17].

**Conclusion**

Finding a supraclavicular lymphadenopathy should lead us to search for an underlying malignancy. The prostate is often overlooked for men presenting with supraclavicular lymphadenopathy as it’s an unusual site of metastatic disease.

This case report is an example of a rare presentation of prostate adenocarcinoma. Therefore, in male patients presenting with malignant supraclavicular lymphadenopathy of unknown origin, prostate cancer should be suspected. A thorough physical examination, including digital rectal examination, and a serum PSA level, which is easy to obtain, can be a key element in differential diagnosis, preventing a delayed detection of the malignancy.

With this case we intend to raise awareness for an unusual presentation of a very frequent disease that has effective treatment even in advanced stages.

**Acknowledgement**

No conflicts of interest or funding to declare.

**References**