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## Case Report

# Unusually High PSA Level Allows Diagnosis of a Metastatic Prostate Cancer in Older Man

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### ABSTRACT

Prostate cancer is now the most commonly diagnosed cancer amongst men in France despite the absence of a generalized screening program. Prostate-specific antigen (PSA) level can be used as a screening test. We report the case of an 86-year-old patient, whose metastatic prostate cancer was diagnosed on an unusually high PSA level (over 5000µg/L), without urologic signs. The diagnosis was then confirmed by a thoracic-abdominal-pelvic CT scan, which found diffuse metastases, before hormonal therapy started.

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## Introduction

In 2015 in France, 50,430 incident cases of prostate cancer were identified. It is the most commonly diagnosed cancer amongst men. With more than 8,500 attributable deaths, prostate cancer is the third most deadly cancer amongst men, although it is one with a good prognosis. The net survival at 5 years is equal to 93% at all stages [1]. There is no generalized prostate cancer screening program in France. Non-aggressive treatments exist, which explain the importance of an early diagnostic to limit the progression.

## Case Report

Mr. T, 86-years-old, with a complete autonomy at home, is hospitalized in a geriatric ward to assess an alteration of his general health with intense asthenia. Family is wondering about development of a cognitive impairment. The patient has mostly a history of cardiological diseases including an aortic valve prosthesis implant and a triple coronary bypass. During a prior hospitalization two months earlier, an occlusion of the left main coronary artery and the right coronary artery was diagnosed. A percutaneous revascularization initially indicated was delayed after an anemia that needed further exploration was found.

The initial clinical examination, including the rectal examination, did not detect any anomaly on prostate or pelvis. The patient did not suffer any dysuria or any bone pain. The blood test at arrival did find an inflammatory anemia with a moderately increased C-reactive protein (CRP) and a hyponatremia probably from a syndrome of inappropriate antidiuretic hormone secretion (SIADH). PSA level, which was explored even though there were no urinary symptoms, was abnormally high at 6078 µg/L and controlled at 7473 µg/L three days later. Following this unexpected result, a thoracic abdominal pelvic CT scan was performed, revealing multiple parenchymatous pulmonary nodules and multiple condensing structures at the spine, the pelvis, the scapula and the ribs. Considering the patient's performance status and his heavy medical history, an aggressive chemotherapy did not seem indicated. Hence, hormone therapy was initiated. One year later, PSA level decreased to 145 µg/L. Mr. T described a big improvement in his health condition, even on cognitive function. Mini Mental State Examination score raised from 22 to 27/30 after 3 months.

## Discussion

Prostate cancer is a heterogeneous disease, it can be totally asymptomatic or on the contrary develop rapidly to a lethal state. PSA is

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a glycoprotein discovered in 1971 [2]. In 1994, it was shown that combining rectal examination and PSA level increased the rate of diagnosis at an early stage to 70-85%, compared to 30% when detection was based on rectal examination only [3]. It is probable that a generalized screening based on PSA level would decrease the number of deaths from prostate cancer, though at the expense of overdiagnosis and over treatment. When a cancer is suspected, a PSA level > 100µg/L would be a marker of an advanced stage or even of a metastatic stage [4]. In the Yamada *et al.* study, out of 184 patients suffering from prostate cancer, only 57 had a PSA level >1000 µg/L [5]. In our hospital, between 2012 and 2019, out of more than 9,500 blood tests, only 4 came back with a level > 5000µg/L.

### Conclusion

Super high level of PSA in this situation with poor clinical symptoms enabled us to make the diagnostic of a metastatic prostate cancer. PSA level is not recommended as a first intention screening test. Indeed, now nothing can distinguish between an aggressive cancer and a tumor with only a small risk of evolution. Thus, generalizing PSA testing could lead to over diagnosis on asymptomatic patients. However, what about testing older patients in whom a cancer is already suspected because of loss of weight, asthenia or thrombosis for example?

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