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Case Report

Incidental chronic lymphocytic leukemia diagnosed following radical prostatectomy for prostate cancer: A case report

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ABSTRACT

Background: chronic lymphocytic leukemia (CLL) patients have a high risk of occurrence of secondary cancers. This risk is three times higher for all cancers and eight times higher for skin cancer. The coexistence of CLL and adenocarcinoma of the prostate is rare.

Case presentation: We report a case of a66-year-old man who underwent radical prostatectomy for prostate carcinoma. The final histopathological diagnosis of Gleason 7 adenocarcinoma of the prostate with incidental Rai stage I chronic lymphocytic leukemia (CLL) was made. No further investigations or treatment was offered due to the age and low disease stage. At the last follow-up of 12 months, the patient is alive, without disease progression for both lymphoma and prostate, with a PSA value of 0.03 ng/ml.

Conclusion: Early detection of lymphoma after radical prostatectomy will allow optimal management. The analysis of this link requires, therefore, additional investigations.

1. Introduction

Radical prostatectomy is the gold standard for the treatment of prostate cancer [1]. The detection of lymph nodes before surgery isproblematic because it is frequently microscopic and undetectable using existing imaging modalities [1–3]. Chronic lymphocytic leukemia (CLL) patients have a high risk of developing secondary cancers. However, the coexistence of CLL and prostate adenocarcinoma is rare [3,4]. We report a case of Incidental chronic lymphocytic leukemia (CLL) diagnosed following radical prostatectomy for prostate adenocarcinoma of the prostate with concomitant chronic lymphocytic leukemia in a 66-year-old man. The work has been reported in line with the SCARE criteria [5].

2. Case description

A 66-year-old man presented with history of lower urinary tract symptoms for 4 months. He raported nocturia, urgency and a weak urine stream. Abdominal examination was unremarkable, and digital rectal examination revealed an enlarged prostate with normal consistency without nodule or induration. Laboratory tests showed a high Prostate-specific antigen (PSA) level (5.06 ng/ml). Liver and renal function tests were normal. Blood test investigations revealed hyperleukocytosis (WBC: 32×10^9/l), hyperlymphocytosis (Lymph: 8×10^9/l), red blood cell, and platelet counts were in the normal range.Multi-parametric abdominal magnetic resonance imaging (MP-MRI) showed the presence of a posterior prostate lesion measuring 16 mm, located in the left peripheral zone, with associated **left external iliac chain lymph node**. The prostatic lesion was hypointense on T2-weighted (T2W) and apparent diffusion coefficient (ADC) images. However it was hyperintense on Diffusion-weighted imaging (DWI images) (Fig. 1). Based on these findings, the prostate lesion was classified as category five according to PI-RADS (Prostate Imaging–Reporting and Data System) assessment score. Endorectal ultrasound-guided prostate biopsy with cognitive fusion after MRI confirmed the presence of Gleason $4 + 3 = 7$ adenocarcinoma of the prostate in 9 cores among 12 cores with a maximum core involvement of 90%. A bone scan did not reveal metastatic bone disease. Based on those findings, the diagnosis of prostatic

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adenocarcinoma with lymphatic metastasis was made. Radical prostatectomy with bilateral pelvic lymph node dissection was done.

On histopathology, bilateral, multifocal microacinar type of prostatic adenocarcinoma was identified. Surgical margins were negative. Lymph nodes and seminal gland examination showed diffuse infiltration of small B-cells lymphocytes. A final Gleason score was 4 + 3 = 7. On immunohistochemistry, the lymphoid infiltration was positively stained for the CD20, CD5, and CD23 and negatively staining for CD3, CD10, cyclin D1 and Bcl 6 (Fig. 2). Thus, the final histopathological diagnosis of Gleason 7 adenocarcinoma of the prostate, staged pT2c N0 MX, associated with an incidental chronic lymphocytic leukemia (CLL), was made. A body scan was performed and showed multiple enlarged mediastinal and bilateral axillary lymph nodes. The CLL was staged as low-risk lymphoma (Rai stage I). The patient was then referred for hematological evaluation. The standard treatment of patients with early disease LLC is a watch-and-wait strategy. Blood cell counts and clinical examinations were carried out every three months after the first year. At the last follow-up of 12 months, the patient is alive, without disease progression, the PSA value is 0.003 ng/ml and blood cell counts was stable.

3. Discussion

CLL is a lymphoproliferative syndrome characterized by a medullary proliferation of a clone B cell, which invades the blood and lymphoid organs [6]. CLL patients have a high risk of association with adenocarcinomas. It is more likely to coincide with adenocarcinoma of the gastrointestinal tract, skin, and breast. However its coexistence with prostatic cancer is rare [2,7,8]. This association rate was 0,8% in Terris et al. study, including 1092 patients who underwent radical prostatectomy. However this rate was 0% in Eisemberger et al. *study, including* 4319 patients [9,10]. Tsimberidou et al. reported a serie of 2028 patients diagnosed with CLL and small lymphocytic lymphoma, among which 551 patients had a history of other malignancies or developed other cancer during the follow-up period [11].

CLL patients have a high risk of secondary cancers, reaching 10–11 times higher than the average population [4,7]. Some authors attribute this risk to the chemotherapeutic treatment of the lymphoma, and others related it to a defect in the cellular immune mechanisms whereas some authors to chance alone [2].

Some authors reported independent factors predicting the development of other cancers such as older age, male sex, 2-microglobulin > 3 mg/L, Lactate dehydrogenase >618 U/L, Creatinine >1.6 mg/dL [9,11]. However, author studies showed that patients with 17p deletion, 6q deletion, 11q deletion or trisomy 12 had an increased risk of developing other cancers compared with other patients [12].

The literature review showed a good prognosis of CLL diagnosed after radical prostatectomy [1,8]. Due to the risk of developing prostate cancer in patients diagnosed with LLC, some authors reported the need for prostatic cancer screening using the PSA test [7].

The Rai classification divides the LLC into five stages [13].

According to this classification, our case was staged a low-risk Rai stage I: Lymphocytosis plus enlarged lymph nodes.,the spleen and liver are not enlarged, and the red blood cell and platelet counts are normal or only slightly low. According to the European society for medical oncology guidelines, the standard treatment of patients with early disease LLC(Rai I stage) is a watch-and-wait strategy, and no further treatment is needed.

After the first year, the patients should be seen at 3-monthly intervals, with physical examinations including palpation of all lymph node areas and a complete blood cell count [14].

4. Conclusion

Incidental chronic lymphocytic leukemia diagnosed following radical prostatectomy for prostate cancer is rare, with few cases reported in the literature.

However, the difficulties of their detection on imaging, the lymph node metastasis can be an indicator of LLC, influencing the therapeutic decision. Urologists should keep in mind such association due to the impact on therapeutic decision and patient follow-up.

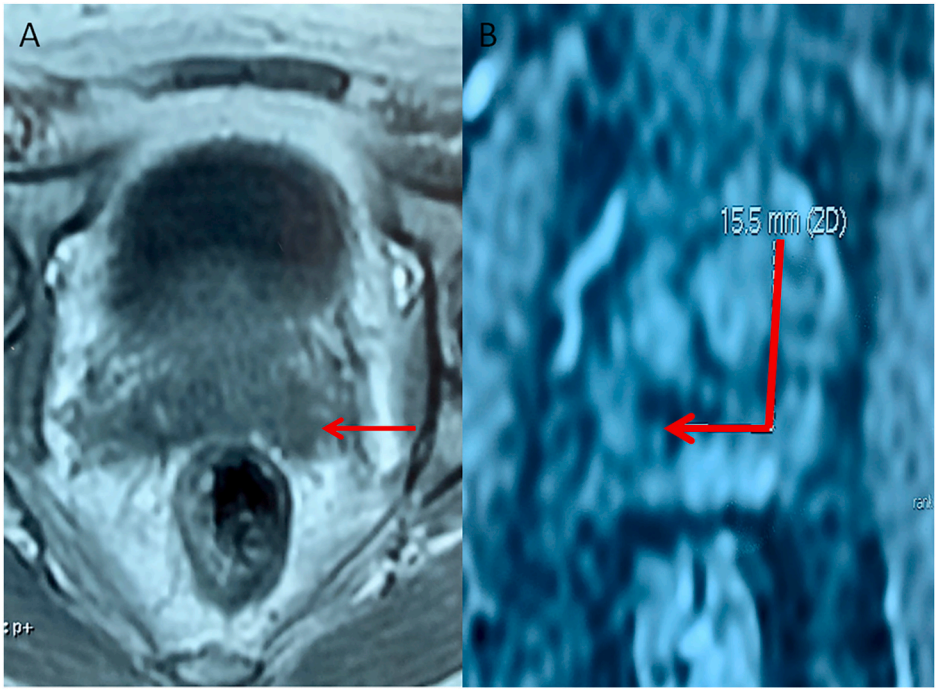

Fig. 1. Multi parametric abdominal magnetic resonance imaging (MP -MRI) showed the presence of a posterior prostate lesion measuring 16 mm, located in the left peripheral zone Magnetic hypointense on T2W (A) and markedly hyperintense on DWI (B).

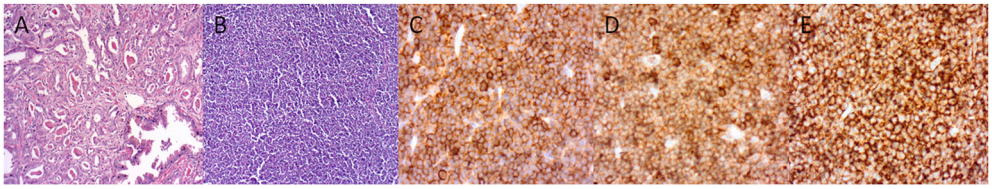

Fig. 2. Microscopic examination of the prostate tissue showing crowded glands of adenocarcinoma with dense eosinophilic crystalloids [Gleason score 7 (4 + 3)] (A). The pelvic lymph node examination revealed small, round tumor cells with low grade of differentiation (H & E) (B) and positive staining for CD20 (C), CD5 (D) and CD23 (E).

Ethical approval

The study was approved by Ethics Committee of Sahloul Hospital approval references: U2350.

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Consent

Written informed consent was obtained from the patient.

Trial registry number

1. Name of the registry:
2. Unique Identifying number or registration ID:
3. Hyperlink to the registration (must be publicly accessible):
   This is not applicable, because this is a case report.

Guarantor

Ghassen tlili.

Informed consent

The patient provided informed written consent prior to submission of this manuscript.

Author contributions

Wiem Majdoub– Editing of manuscript, data collection, Anatomopathology analysis.

Ghassen tlili – Editing of manuscript, supervision of the manuscript.

Houssem Ammar– Editing of manuscript, literature review, drafting the manuscript.

Emir akacha– Editing of manuscript, data collection.

Sonia Dziri– Data collection, Editing of the manuscript.

Waad Farhat-data collection, Editing of manuscript.

Mehdi jaidane- Editing of manuscript, data collection.

Rahul Gupta– Editing of manuscript, literature review, drafting the manuscript.

Khaled ben ahmed – manuscript correction, supervision of the manuscript.

Awatef Azzabi – Supervision of the manuscript, manuscript correction.

Declaration of competing interest

The authors declare that they have no conflict of interest.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.amsu.2021.102516.

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