Functional medicine

Diagnosis of monoclonal B cell lymphocytosis (MBL) through transurethral resection of prostate for obstructive lower urinary tract symptoms

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A B S T R A C T

Incidental diagnosis of haematolymphoid disorders in prostate tissue is rare, with the largest study in the literature reporting a 0.37% incidental lymphoma diagnosis in prostate and associated lymph node tissue. B cell lymphocytosis (MBL) is a relatively recently defined disease entity. The authors present the diagnosis and management of a patient diagnosed with incidental MBL on transurethral resection of prostate (TURP), performed for symptomatic lower urinary tract symptoms refractory to pharmacological therapy. Initially thought to represent chronic lymphocytic leukemia, repeated flow-cytometric analysis confirmed the diagnosis of MBL, and the patient remains under surveillance without the requirement for further medical treatment.

Introduction

Incidental prostate adenocarcinoma diagnosed at transurethral resection of prostate (TURP) surgery is well known. Less commonly reported in the literature is the incidental diagnosis of other haematological malignancies on TURP chip histology. B cell lymphocytosis (MBL) is a relatively new disease entity, introduced to differentiate patients with an absolute B-cell count of less than 5000 per μL in the absence of symptoms of a lymphoproliferative disorder such as drenching night sweats or unexplained fever, fatigue or weight loss and no palpable lymphadenopathy or splenomegaly suggestive of a lymphoproliferative disorder, from those with leukemia. Chu et al. found a 0.17% rate of the incidental diagnosis of malignant lymphoma on a 15 year review of prostate histology from prostate biopsy, prostatectomy, and TURP. Few other case reports exist in the literature detailing the diagnosis of haematolymphoid disorders on prostate histology. To the best of the authors’ knowledge, there are no reported cases of the incidental diagnosis of MBL on prostate histology.

Case presentation

A 73 year old man with a background of previous bioprosthetic aortic valve replacement, paroxysmal atrial fibrillation, two previous discectomies, and previous laparoscopic bilateral hernia repair was referred to the urology outpatient clinic for review of his obstructive lower urinary tract symptoms that were refractory to pharmacological management with prazosin. He reported a variable flow, urinary hesitancy, nocturia, and occasional urinary urgency. He had no history of macrohaematuria or urinary tract infections. On digital rectal examination he had a mildly enlarged, smooth prostate gland. His urinary tract ultrasound showed a prostate volume of 31 cc, and incomplete bladder emptying with a post void residual of 93 cc. His serum total prostate specific antigen level was 2.9ug/L. He was commenced on dutasteride/tamsulosin and scheduled for clinical follow-up in three months.

On three month review he reported only minimal symptomatic improvement with dutasteride/tamsulosin and, after a detailed discussion regarding TURP surgery, he elected to proceed with surgical management.

Endoscopic assessment of his lower urinary tract showed a bilobar occlusive prostatic urethra, and high grade bladder trabeculation. He underwent a routine TURP, and had an uncomplicated postoperative course with a successful trial of void the following day and discharge home.

Unrelated to his TURP, the patient underwent endoscopic retrograde cholangiopancreatography and biliary stent placement, followed by a laparoscopic cholecystectomy two months post TURP during an inpatient admission for cholangitis. During this admission thyroid function tests revealed positive thyrotropin receptor autoantibodies cementing the diagnosis of Graves’ disease, and with euthyroid serum thyroid function tests the patient was subsequently weaned off carbimazole.

At his routine three month postoperative urology appointment he
reported improvement in his lower urinary tract symptoms, and review of his TURP histology showed no evidence of prostatic adenocarcinoma, but incidentally reported atypical uniform small lymphoid infiltrate (Fig. 1).

Further immunohistochemical stains (Fig. 2) showed positive staining for CD79a (2a) in small lymphoid cells. There was positive staining for CD20 (2b), which showed focal reduced expression in small lymphoid cells. CD3 highlighted the background T lymphocytes. CD20 positive B lymphocytes were seen to express CD23 (2c) and CD5 (2d) and BCL2. There was negative staining for CD10 and Cyclin D1. Overall features were suggestive of a B cell lymphoproliferative disorder favouring CLL or SLL.

The patient’s serum lymphocyte count was 5.49 × 10⁹/L which was stable. His serum haemoglobin and platelets were within the normal range. On examination he had no cervical or axillary lymphadenopathy, inguinal examination revealed bilateral non-tender mobile lymph nodes up to 1.5cm in size. Abdominal examination showed no hepatosplenomegaly.

Contrast enhanced computed tomography of the patient’s head, neck, chest, abdomen, and pelvis revealed no radiological cervical, thoracic, or abdominal lymphadenopathy. Haematology specialist impression was of an RA10 chronic lymphocytic leukemia, and cytogenetics testing revealed a 11q22 deletion, which was deemed a poor prognostic factor.

The patient was managed with clinical observation, and at his six and nine month reviews it was noted his serum lymphocyte count had normalised, instead confirming a diagnosis of MBL. Repeat flow cytometry at six months showed a persisting monoclonal population small (6%) lambda (wk) restricted CD 19+(wk)/CD20+(wk)/CD5+/23 variable monoclonal B cell population, and at a further six month review showed a 2% lambda restricted monoclonal B cell population confirming stable MBL. The patient continues to be monitored with yearly flow cytometric analysis.

Discussion

This case report contributes to the literature a different subtype of haematological disorder that can be diagnosed on TURP histology, in addition to the rare occurrence of incidental haematolymphoid diseases that have been previously reported in the literature. In this case, all routine preoperative targeted urological examinations and investigations in the outpatient clinic did not reveal any abnormality. The bladder outlet obstruction symptoms the patient experienced secondary to his MBL were in keeping with symptoms expected from a patient with benign prostatic hyperplasia. TURP to treat the patient’s obstructive lower urinary tract symptoms aided in the diagnosis of MBL and there were no adverse outcomes secondary to this route of incidental diagnosis. Given the rarity of this incidental diagnosis and the lack of adverse outcomes from diagnosis on TURP histology, the authors do not feel that any further preoperative investigations to aid preoperative diagnosis of MBL would improve patient outcomes.
Consent

Written patient consent was obtained.

Contributorship statement

MMM (conceptualization, data curation, writing), JRP (formal analysis, writing), SF (data curation, writing, supervision), SM (conceptualization, formal analysis, writing – review & editing, supervision).

Declaration of competing interest

There are no conflicts of interest to disclose.

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