patients with the resolution of all the symptoms.[7] Antihistamine therapy is reported with resolution of the symptoms[4,7] especially when associated with prednisone,[4] but one patient reported a diminished quality of life[8] and another one relapsed after 1 month from bladder catheter removal.[7] Treatment with benralizumab reported with a clinical improvement both in outcome and follow-up[8]. Nonsteroidal anti-inflammatory drugs, hydroxyurea, IFN-alpha, mepolizumab, imatinib and other tyrosine-kinase inhibitors, vincristine, 6-mercaptoputine, busulfan, chlorambucil, azathioprine, cyclosporine-A, cytarabine, methotrexate, immunoglobulins, and alemtuzumab were reported for the EC second line treatment.[2,3,6,8]

In case of gross hematuria and/or lower urinary tract symptoms, HES manifested as EC should be considered in differential diagnosis. BMB and cystoscopy with biopsy should be performed to confirm the suspicion. Major, but not resolving, surgery should be avoided in favor of a conservative therapy. Hyperbaric therapy could be considered to treat EC hematuria and studied for additional indications, such as hematuria.

Ethical statement

An institutional review board approval was not required as this was a single case. The patient provided informed consent.

Conflict of interest

The authors declare no conflicts of interest associated with this manuscript.

Registry and the Registration No. of the study/trial

Not applicable.

Author contributions

Franco Alchiede Simonato: Conceptualization; methodology; writing – original draft; writing – review and editing. Nicola Pavan: Conceptualization; formal analysis; writing – original draft. Mirko Pinelli: Conceptualization; supervision. Gabriele Tulone: Investigation; methodology; validation. Rosa Giaimo: Methodology; supervision; validation. Annamaria Martorana: Supervision; visualization; writing – review and editing. Alchiede Simonato: Conceptualization; investigation; supervision; writing – review and editing.

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Editorial Comment

Editorial Comment to A conservative treatment for eosinophilic cystitis

The authors described a case of difficult-to-diagnose eosinophilic cystitis (EC) that caused recurrent hematuria.[1] EC is an inflammatory disease with eosinophilic infiltration of the bladder wall. Peripheral blood eosinophilia is frequently observed in patients with EC but is not shown in this case. A pooled analysis of 135 patients with EC reported that peripheral eosinophilia (defined as >5% of eosinophilia among leukocytes) occurred in 43% of patients.[2]

The definition of hypereosinophilia (HE) includes blood eosinophilia and/or tissue eosinophilic infiltration or increased eosinophils (≥20% of all nucleated cells) in the bone marrow similar to this case; thus, EC is considered part of HE.[3] Various HE etiologies have been listed, including infection, drugs such as tranilast, allergy, or parasites. Taking a detailed medical history, such as a foreign voyage or dietary supplement is important to clarify the cause of HE. Additionally, hematologic malignancies, such as chronic eosinophilic leukemia, can also cause HE; therefore, consultation with a hematologist should be considered if pathological findings of the bladder tissue obtained using transurethral resection show eosinophilic infiltration.

There is no consensus on the treatment for EC, and corticosteroids or antihistamines are commonly used, with a relatively

favorable response (77%) as the initial treatment. However, recurrence commonly occurs, and one or more recurrence was observed in 28% of patients with EC treated by the initial treatment.[2] Therefore, follow-up using ultrasonography or cystoscopy might be necessary even in successfully treated patients with EC. Cyclosporine[4] or cystectomy[5] has been reported as a treatment for recurrent cases or cases showing resistance to initial treatment. Although EC is a benign disease and medical treatment can often achieve complete remission and bladder preservation, underlying diseases that cause EC should be considered, particularly in unresponsive cases for the initial medical treatment or patients with symptoms involving multiple organs.

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DOI: 10.1002/iju5.12539

Conflict of interest

The author declares no conflict of interest.

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