Case Reports in Ophthalmology

Case Rep Ophthalmol 2024;15:184–188
DOI: 10.1159/000536572
Received: November 22, 2023
Accepted: January 11, 2024
Published online: March 7, 2024



**Case Report**

# Vogt-Koyanagi-Harada-Like Disease with Loss of Visual Acuity due to Sunitinib Treatment Restored after Switch in Therapy: A Case Report

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**Keywords**
Vogt-Koyanagi-Harada-like disease · Serous retinal detachment · Sunitinib treatment · Case report

**Abstract**
***Introduction:*** In this paper, we report a case of visual impairment during treatment with sunitinib in a patient with metastatic renal cell carcinoma. ***Methods:*** Retrospective chart review was used. ***Case Presentation:*** We describe a 74-year-old male with metastatic renal cell carcinoma who was treated with sunitinib and experienced severe loss of visual acuity due to serous retinal detachment and intraretinal fluid. Upon discontinuation of sunitinib, the retinal fluid resolved, and visual acuity was restored. ***Conclusion:*** Serous retinal detachment has been described as a side effect of sunitinib use. Discontinuing sunitinib promptly resolved the subretinal fluid collections and restored vision.



## Introduction

Sunitinib belongs to the class of tyrosine kinase inhibitors and inhibits vascular endothelial growth factor 1-3 (VEGF1-3) and platelet-derived growth factor (PDGF)-beta [1–3]. The working mechanism results in suppression of tumour growth, neoangiogenesis and metastatic progression. Sunitinib is currently prescribed for the treatment of advanced or metastatic renal cell carcinoma, inoperable imatinib-resistant malignant gastrointestinal

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stromal tumour (GIST), and inoperable or metastatic well-differentiated neuroendocrine tumours of the pancreas [2]. Side effects affecting the visual pathway include oedema in the visual cortex, observed in cases of reversible posterior leukoencephalopathy syndrome [2, 4]. We report a patient experiencing visual impairment due to sunitinib administration. In our case, visual loss was attributed not to oedema within the visual cortex but rather to the presence of serous retinal detachment, which was reported in one previous case report and mentioned in an adverse effect study [5, 6].

## Case Report

A 74-year-old Caucasian male was referred to our department with a drop in visual acuity (VA) in both eyes over the past week. A VA of 6/10 (right eye) and 6/7.5 (left eye) had been documented 2 weeks earlier, attributed to cataract. The patient received palliative treatment with sunitinib 50 mg/day on the standard 4-week on 2-week off schedule for the management of osseous, hepatogenic, and lymphogenic metastatic chromophobe renal cell carcinoma. At the start of the symptoms, he had been on sunitinib for the past week. Additionally, he had a history of prostate carcinoma in 2022, for which he underwent curative radiotherapy. Additional medication consisted of paracetamol and pantoprazole only. On ophthalmological examination, VA was 6/30 in the right eye and 6/120 in the left eye. Anterior chamber was moderately deep in the left eye and shallow in the right, both with pigmented cells present. Serous retinal detachments involving the macula and inferior region were observed bilaterally, as shown in Figure 1. Optical coherence tomography (OCT) of the macula revealed massive subretinal and intraretinal fluid in both eyes. Ultrasonography did not detect measurable solid choroidal abnormalities. Electroretinogram did not show electronegativity and thus was not typical for paraneoplastic syndromes like cancer-associated retinopathy (CAR). Fluorescein angiography (FAG) exhibited bilateral multiple pinpoint hyperfluorescence in the posterior pole, resembling Vogt-Koyanagi-Harada (VKH) syndrome. Prednisone was initiated and gradually increased to 80 mg/day, but the visual complaints continued to worsen. The patient expressed a clear preference to prevent any further deterioration of his vision, even if it meant discontinuing the treatment for his advanced metastatic disease and potentially shortening his life expectancy. Sunitinib was discontinued, and on evaluation after 7 days, VA had improved to 6/30 in the right eye and to 6/12 in the left eye, and OCT displayed a marked reduction in serous fluid collections.

It was decided to permanently discontinue the use of sunitinib due to the evident improvement in vision. Prednisone was discontinued as well. In a bid to slow metastatic disease, the patient was switched to everolimus. The decision to use this mTOR inhibitor was made because limited effectiveness of immunotherapy has been described in this subtype of renal cell carcinoma [7, 8]. Five weeks later, the VA had improved to 6/10 in the right eye and 6/6.7 in the left eye, with no fluid collections visible on fundoscopy or OCT. After initiating everolimus, visual signs and symptoms did not recur. The patient passed away 4 months later due to the progression of metastatic illness. VA was maintained during the entire last stage of life.

## Discussion

VKH-like disease has been previously described as a side effect following the administration of anticancer systemic therapy, primarily associated with MEK inhibitors [9]. In the group of tyrosine kinase inhibitors, VKH-like disease has been reported in 2 cases [10]. These

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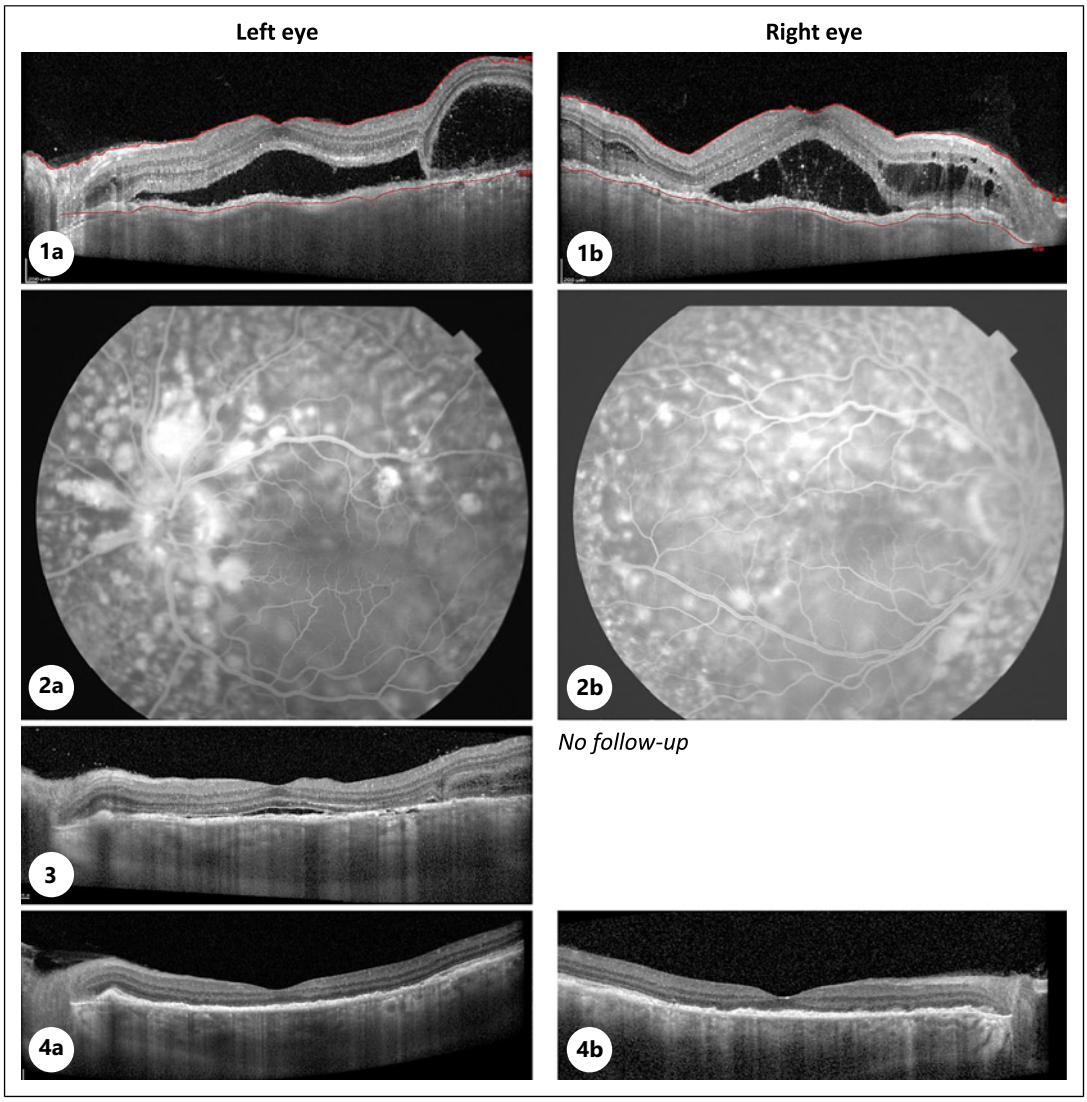


**Fig. 1. 1a**, **1b** OCT at presentation, revealing bilateral serous retinal detachment and intraocular fluid. **2a**, **2b** FAG showing bilateral multiple pinpoint hyperfluorescence in the posterior pole resembling VKH syndrome. **3** OCT 3 weeks after discontinuation of sunitinib, showing evident reduction in serous fluid collections. **4a**, **4b** OCT 5 weeks after discontinuation of sunitinib, showing complete resolution of sub- and intraretinal fluid.

2 patients had undergone treatment with imatinib and dasatanib for chronic myeloid leukaemia and developed serous retinal detachment. Importantly, in both cases, the administration of the tyrosine kinase inhibitor was continued, complemented by the introduction of prednisolone therapy. Consequently, the fluid collections spontaneously resolved, leading to a recovery of VA. The occurrence of serous retinal detachment and intraretinal fluid following sunitinib use has, to our knowledge, been documented in detail only once before in a case report [5]. In this case, after discontinuing sunitinib, regression of serous retinal detachment occurred. It is not described whether the subretinal fluid resolved completely. In a study investigating spontaneous reports from healthcare professionals, the adverse event of neurosensory retinal detachment was mentioned 24 times in connection with sunitinib, and macular oedema was reported five times [6].

We show that after discontinuing sunitinib promptly after the onset of symptoms, subretinal fluid can resolve and VA can be restored. It is crucial to discuss patient's preferences, since avoiding vision loss might mean deviating from the preferred oncological treatment.

In summary, we report a case involving evident vision loss, retinal oedema, and subretinal fluid following the administration of sunitinib for metastatic disease. Upon discontinuation of sunitinib, retinal fluid collections resolved, and VA was restored. The CARE Checklist has been completed by the authors for this case report, attached as supplementary material.

## Statement of Ethics

Ethical approval is not required for this study in accordance with local or national guidelines. Verbal informed consent was obtained from the patient and written informed consent of his partner for publication of the details of their medical case and any accompanying images for this report, and this consent was documented in the medical file.

## Conflict of Interest Statement

The authors have no conflicts of interest to declare.

## Funding Sources

This study was not supported by any sponsor or funder.

## Author Contributions

M.O.: data collection, original draft preparation, and writing the final manuscript. M.M.: review, validation, and supervision. Y.J.H., T.V., S.L., and S.G.: review and validation. All authors contributed to the final manuscript.

## Data Availability Statement

All data generated or analysed during this study are included in this article and its online supplementary material files. Further enquiries can be directed to the corresponding author.

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