


CASE REPORT

Primary ovarian adenocarcinoma presenting with rubeotic glaucoma and vitritis: A case report

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Funding information

This research received no funding

Abstract

Ovarian adenocarcinoma is an unusual cause of head or brain metastasis and seeding to the eye ball is extremely rare. A high index of suspicion and a careful ophthalmic examination can guide the patient work up. In this particular case, rubeotic glaucoma and vitritis antedated the diagnosis of ovarian malignancy.

KEYWORDS

glaucoma, ovarian adenocarcinoma, rubeosis irides, vitritis

1 | INTRODUCTION

Metastatic tumors comprise the majority of intraocular malignancies in adults, and in many cases, they can precede the detection of the primary cancer. Patients usually present with blurred vision, photophobia, ocular pain, or a visible mass on routine eye examination. Breast and lung cancers represent two-thirds of the primary malignancies with intraocular metastases.¹

Metastatic primary adenocarcinoma of the ovaries typically presents with intra-abdominal seeding together with a wide variety of vague and non-specific symptoms such as bloating, abdominal distension, and discomfort. It usually remains confined to the peritoneal cavity at presentation and throughout its course in approximately 85% of the cases.² Occasionally, patients present with aggressive disease, manifesting with parenchymal liver or lung

seeding, or developing metastases to distant sites such as the brain. The eye is an unusual site for ovarian tumors.³

We report a case of metastatic adenocarcinoma of the ovary presenting with intractable rubeotic glaucoma and vitritis preceding the diagnosis of the primary malignancy.

2 | CASE DESCRIPTION

A 53-year-old asthmatic female patient presented to the eye clinic with right eye pain and blurring of vision for one month. She had no complaints in the left eye. She was previously diagnosed with unilateral glaucoma in the right eye six months ago and was on maximum topical therapy. On physical examination, her best-corrected visual acuity was 0.3 in the right eye and 1.0 in the left eye. Slit lamp bio-microscopy showed ciliary injection,

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anterior chamber cells, an early cataract, and flagrant rubeosis iridis in the right eye (Figure 1). Intraocular pressure (IOP) by Goldmann tonometry was 35 mmHg. Her fundus examination was hazy with dense vitritis and a whitish choroidal shadow in the infero-temporal quadrant. The left eye examination was totally unremarkable with an IOP of 11 mmHg.

The patient was admitted as a case of rubeotic glaucoma, and a complete uveitis work-up was ordered. As part of her review of systems, the patient reported periumbilical discomfort and her physical examination revealed abdominal shifting dullness.

Abdominal ultrasound was performed, and this revealed ascites and bilateral ovarian masses with peritoneal seeding. The gynecology service was consulted, and the patient was prepared for exploratory surgery.

The patient underwent a laparoscopic bilateral salpingo-oophorectomy, and 3.5 L of ascitic fluid was aspirated. Bilateral ovarian masses (10 × 10 × 5 cm and 7 × 7 × 3 cm) with omental and peritoneal involvement were visualized and excised with maximum de-bulking. Histo-pathological and cytological examinations revealed a high-grade serous adenocarcinoma with multiple tumor implants (Figure 2).

The patient was later planned for right pars plana vitrectomy, phacoemulsification, posterior chamber intraocular lens implantation, and injection of silicone oil. The aim was to clear the vitreous haze, improve the deteriorating visual acuity, remove her rapidly progressive cataract, and relieve her intractable glaucoma which was resistant to maximum medical therapy including acetazolamide and mannitol. A vitreous sample and a choroidal biopsy were obtained and sent to pathology. Both tested positive for malignant adenocarcinoma metastasizing to the choroid, seeding to the vitreous cavity, and producing florid rubeosis (Figure 3). The patient was labeled as stage IV



FIGURE 1 Slit lamp photograph of the right eye showing florid rubeosis irides

adenocarcinoma of the ovary and was transferred to the care of the oncology team for chemotherapy and further management. Unfortunately, she succumbed to her disease after the first cycle of chemotherapy.

3 | DISCUSSION

The most common intraocular malignancies among adults are metastatic tumors, mostly found in the choroid and to a lesser extent in the iris and ciliary body.⁴ The posterior choroid is highly vascular compared with the iris, which renders it more susceptible to hematogenous spread of cancer cells.⁵ Cancer metastasizing to the eye has been generally associated with poor life expectancy, with breast and lung malignancies representing the most common primary tumors.⁶

The presenting signs and symptoms of uveal metastatic tumors vary widely and include pain, photophobia, blurred vision, rubeosis, and a visible mass; and they can manifest before discovering the primary systemic malignancy. Welch et al found that 67% of patients with uveal metastasis presented with a known primary malignancy whereas 33% had no known primary cancer. The report maintains that the overall survival did not vary relative to uveal metastasis. Early-onset uveal metastases were found with lung and gastrointestinal tract cancers, whereas late-onset metastases were found with breast and thyroid malignancies.⁷

Ovarian adenocarcinoma rarely metastasizes to the head or the central nervous system (CNS), although there has been a slight increase in prevalence, with older patients faring worse. Halassy et al reviewed 57 publications detailing the accounts of 591 patients with brain metastasis from ovarian tumors and reported a median age of 54.3 years (range 20–81) with the majority of patients (57.3%) suffering from multiple brain lesions after establishing the primary cancer. Only 9% reported visual disturbances, but none had eye metastasis.⁸

Zhang et al reported nine cases of ovarian malignancies metastasizing to the brain with headache as the main presenting symptom and the frontal lobe the most likely site.⁹ The rarity of CNS metastasis often precludes routine screening, although a lowered threshold for brain imaging especially in the context of new neurological symptoms may be warranted.¹⁰

Metastasis to the eye is very rare, and some cases may present with non-specific blurring of vision, photopsia or visual disturbances, or even remain asymptomatic.¹¹ In one report by Roels et al, an ovarian carcinoma was diagnosed after the patient presented with unilateral paraneoplastic retinopathy, diagnosed with multimodal imaging, and electroretinography, but with no metastasis. The case

FIGURE 2 Hematoxylin and Eosin stain of the ovarian tumor showing high grade serous carcinoma. (A) Original magnification 100 \times , (B) 400 \times magnification. Inset high magnification of the malignant cells

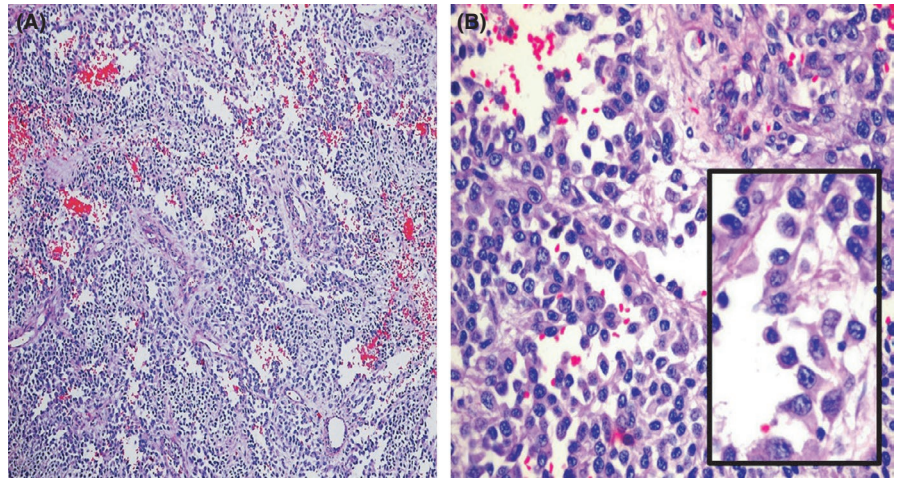
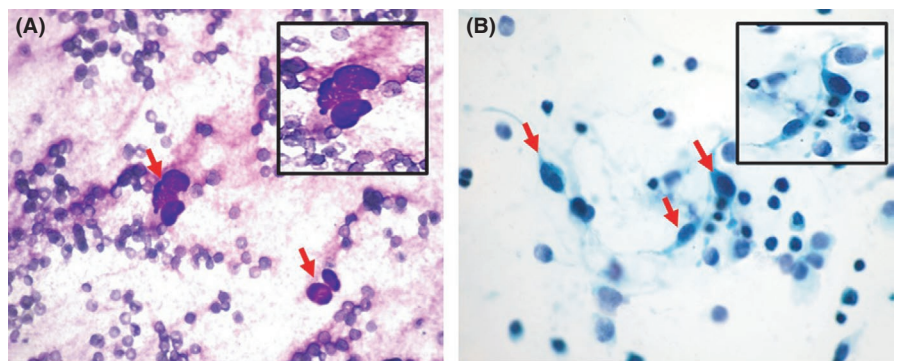


FIGURE 3 Vitreous fluid cytology showing malignant cells (arrows) analogous to the ovarian carcinoma. (A) Diff-Quick stain, 600 \times magnification. (B) Papanicolaou stain, 600 \times magnification. Inset reveal the morphology of the malignant cells



was responsive to aggressive cancer therapy, and the retinopathy was reversible.¹² To the best of our knowledge, this is the first case of a bilateral ovarian adenocarcinoma presenting with rubeosis iridis, glaucoma, and vitreous haze before the diagnosis of the primary ovarian malignancy.

4 | CONCLUSION

A careful multidisciplinary approach including a thorough ophthalmic examination and a high index of suspicion is key in detecting signs of underlying diseases including malignant tumors. In this particular case, the unique unilateral ophthalmic finding of rubeotic glaucoma with vitritis was instrumental in unveiling an underlying ovarian adenocarcinoma.

ACKNOWLEDGEMENT

None.

CONFLICT OF INTEREST

The authors report no conflict of interest.

AUTHOR CONTRIBUTIONS

N. Abu-Yaghi was responsible for conception and supervision of the manuscript, and approved the final draft. A. Aljesrawi and M. Alafeshat gathered the data and wrote the first draft, while B. Mafrashi verified the data and wrote the second draft. N. Abu Shahin prepared, read, and reported the pathological slides, and produced the images. All authors are equally accountable for this work.

ETHICAL APPROVAL

Ethics approval was waived by the Institutional Review Board at Jordan University Hospital as this is a case report with no risk of harm to the patient.

CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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How to cite this article: Abu-Yaghi N, Aljesrawi A, Alafeshat M, Mafrachi B, Abu Shahin N. Primary ovarian adenocarcinoma presenting with rubeotic glaucoma and vitritis: A case report. *Clin Case Rep*. 2022;10:e05729. doi:[10.1002/ccr3.5729](https://doi.org/10.1002/ccr3.5729)