Unusual presentation of more common disease/injury

Ocular and orbital metastases presenting as a first sign of gastric adenocarcinoma

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Correspondence to Dr Ranju Sitaula, helloranju50@yahoo.com**Summary**

The authors report a case of simultaneous choroidal and orbital metastases with optic nerve involvement presenting as an initial manifestation of gastric adenocarcinoma. To our knowledge, this is the first case of its kind reported in the literature where a 60 years male presented with 6 months history of progressive painful diminution of vision in his left eye associated with inward and upward rotation of the same globe. Examination of left eye revealed displacement of the globe superomedially by an inferolateral mass with restriction of ocular motility in levoversion. Fundus examination showed exudative retinal detachment with a subretinal mass which was supported by the ocular ultrasonography. Intraocular and orbital tumour was demonstrated by CT. Endoscopic biopsy revealed adenocarcinoma of the stomach. The left orbit was exenterated and specimen was sent for histopathological examination which confirmed the presence of same metastatic tumour cells in the eye and orbit. The patient underwent chemotherapy and radiotherapy for gastric carcinoma but the patient died after 6 months.

BACKGROUND

This case represents a rare occurrence of metastatic gastric adenocarcinoma to the orbit, choroid and optic nerve developing as a first sign. We hope this case will give gastroenterologists, ophthalmologists and oncologists the importance of eye examination and also gives an insight into management of such cases in the future.

CASE PRESENTATION

A 60-year-old gentleman presented to our outpatient department with 6 months history of progressive painful loss of vision in the left eye. This was followed by inward and upward rotation of the same eye since 3 months. On presentation, his visual acuity was 6/12 in right eye and perception of light with inaccurate projection of rays in left eye. There was a firm palpable mass noted inferolaterally adjacent to left inferior rectus adherent to sclera with posterior extension. The left globe was displaced superomedially and ocular motility was restricted in the left lateral gaze. On anterior segment examination, the anterior chamber was shallow with relative afferent pupillary defect. Fundoscopic examination of the left eye revealed a total exudative retinal detachment. A large yellowish choroidal mass behind the detached area was suspected. The right eye was unremarkable.

The diagnostic impression on clinical and radiological findings was of a probable metastatic neoplasm.

INVESTIGATIONS

1. Ultrasonography disclosed a choroidal mass with high internal reflectivity associated with retinal detachment.
2. CT of orbits demonstrated a subretinal mass inferotemporally and a large orbital mass in the anterolateral quadrant occupying ocular, intraconal and extraconal spaces (figure 1A,B).

3. A detail systemic evaluation revealed anaemia, positive occult blood in the stool and raised alkaline phosphate level. Endoscopy of the stomach showed ulceroinfiltrative lesion in antrum, body and cardia of the stomach, highly suspicious of malignancy.
4. The histopathological evaluation of the gastric tissue revealed poorly differentiated adenocarcinoma of the stomach (figure 2).
5. In chest x-ray, there were multiple ill-defined patchy nodular opacities with fibrotic changes in both lower lung fields suggestive of metastatic lesions.
6. Histopathological evaluation showed atypical pleomorphic cells arranged in glands and tubules infiltrating uvea, sclera, optic nerve and orbital fibroadipose tissue but sparing eyelids and cornea.

DIFFERENTIAL DIAGNOSIS

- Secondary metastatic tumour of eye
- Primary choroidal neoplasm with extraocular spread.

TREATMENT

On the basis of features suggestive of choroidal and orbital metastases with no potential vision, modified exenteration of the left orbit was performed without complication and the specimen was submitted to histological evaluation (figure 3).

OUTCOME AND FOLLOW-UP

So the presence of orbital, scleral, uveal and optic nerve metastases from gastric adenocarcinoma was confirmed by histopathology. The patient underwent chemotherapy and radiation for carcinoma of the stomach but died after 6 months.

DISCUSSION

Metastatic cancer to the eye is the most common intraocular malignancy in comparison to other primary intraocular

Figure 1 (A) CT of orbit-axial scan showing intraocular and orbital mass with retinal detachment. (B) CT of orbit-coronal scan showing intraconal and extraconal mass occupying inferolateral orbit.

Figure 2 Histopathological section of the gastric specimen showing atypical pleomorphic cells with hyperchromatic nucleoli arranged in glands and tubules.(original magnification 400X).

Figure 3 Exenterated left orbit specimen showing choroidal tumour with retinal detachment and thickening of optic nerve.

malignancies.¹ Metastasis of gastrointestinal neoplasms to the eye and the orbit is extremely rare, accounting for approximately 4% of total cases according to two large case series studies.^{2 3} The commonest site for metastatic tumour in the eye is the choroid, though dissemination to the orbital and the extraocular structures have also been reported.² Choroidal metastasis has been documented histologically in up to 12% of patients who die of cancer. The isolated metastasis to the eye/orbit ratio ranges from 6:1 to 9:1 in adults.^{3 4}

Few similar cases have been reported in literature in which ocular or orbital metastasis shows the first sign of a malignant disease of stomach but simultaneous involvement of ocular, orbital with optic nerves is rare.

Common presenting symptoms and signs of ocular metastasis are ocular pain, exophthalmos, dystopia, retinal detachment, mass lesion, uveitis, secondary glaucoma and decreased vision.² The diagnosis can be suggested by prior medical history, ocular evaluation, orbital imaging studies and systemic evaluation confirmed with a biopsy and histopathology.

Prognosis in patients with metastatic cancer to the eye is similar to a patient with any stage IV malignancy⁵ so that life prognosis in patients with those metastases is generally unfavourable. Low socioeconomic status of our patient is likely an important contributor to the late presentation and advanced stage of the disease.

Treatment of ocular metastasis from gastrointestinal tract depends upon patient's general condition, stage of the primary disease and the findings of the involved eye. Chemotherapy, given for the treatment of the primary disease, is expected to have positive effects on the metastatic

sites too. In the presence of more extensive spread to uveal tract, optic nerve, orbit and adnexae, the treatment of choice is enucleation or even exenteration which was done in our case.

Learning points

- Gastroenterologists and ophthalmologists need to be aware of the metastatic potential of the gastrointestinal lesions to the eye.
- The ophthalmologist may play an important role in the care of such patients, since ocular lesions may precede potentially serious systemic manifestations.
- A comprehensive systemic survey for the primary malignancy and metastatic disease and a complete ocular examination is a must.

Competing interests None.

Patient consent Obtained.

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