

## Colon Adenocarcinoma With Orbital Metastasis

Esin Oktay<sup>1</sup>, Özgür Tanrıverdi<sup>2</sup>, Sabri Barutça<sup>3</sup>, Nezi Meydan<sup>3</sup>

<sup>1</sup> Internal Medicine & Medical Oncology, Aydın Atatürk State Hospital Aydın, TURKEY

<sup>2</sup> Internal Medicine & Medical Oncology, Sitki Kocman University, Medical Faculty, Mugla, TURKEY

<sup>3</sup> Internal Medicine & Medical Oncology, Adnan Menderes University, Medical Faculty, Aydın, TURKEY

<sup>4</sup> Internal Medicine & Medical Oncology, Adnan Menderes University, Medical Faculty, Aydın, TURKEY

Corr. Author:  
**Esin Oktay**,  
Aydın Atatürk  
Devlet Hastanesi  
Tıbbi Onkoloji Bölümü,  
09100 – AYDIN, TÜRKİYE  
esinct@gmail.com  
P: +90 (505) 317 06 39

3. International  
Gastrointestinal Cancers  
Conference kongresinde,  
2013 yılında poster olarak  
sunulmuştur.

### Abstract

Orbital metastasis in solid tumors, especially in colon adenocarcinomas, is very rare and its management is a real challenge in clinical oncology. Here, we report a 60-year-old woman with stage IV colon adenocarcinoma, who was admitted with ophthalmic complaints while under systemic chemotherapy. The patient had conjunctival chemosis, severe exophthalmos, ptosis, and limitation of movement on the left eye. Magnetic resonance imaging revealed a 35x21 mm soft tissue mass in the left orbita. The patient refused further treatment and was released in 15 days. The treatment of metastatic orbital tumors is often multidisciplinary; combining local treatments (surgery and radiotherapy), systemic treatments (chemotherapy, biological and hormonal therapies), and palliative approaches (mainly based on corticosteroids) together. The disease has poor prognosis due to dissemination of the systemic cancer.

### Özet

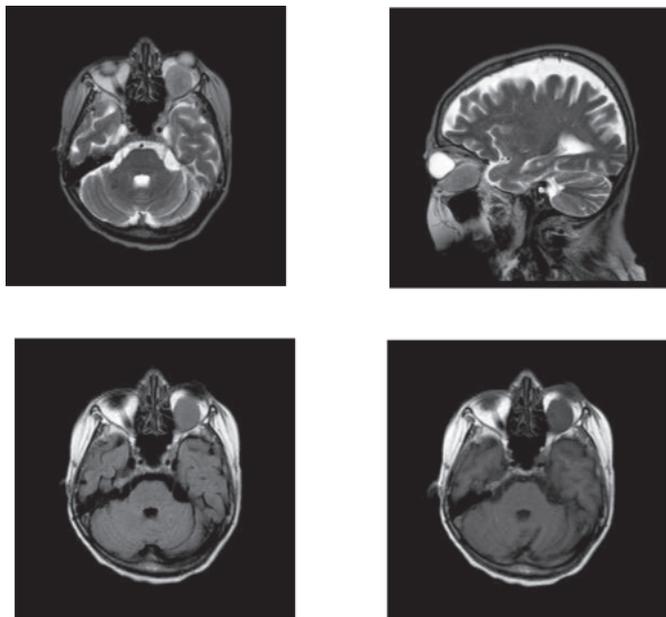
Orbital metastaz tüm solid tümörlerde, özellikle de kolon adenokarsinomunda oldukça nadir bir durumdur ve yönetimi klinik onkolojide gerçek bir sorundur. Biz bu yazıda 60 yaşında, evre IV kolon adenokarsinomu tanısı olan ve sistemik kemoterapi altında oftalmik şikayetler ile başvuran kadın hastayı bildiriyoruz. Hastanın sol gözünde konjonktival kemozis, şiddetli egzoftalmi, ptozis ve hareket kısıtlılığı vardı. Manyetik rezonans görüntüleme sol orbita bir 35x21 mm'lik yumuşak doku kitlesi saptandı. Sunulan olgu ileri tedaviyi reddetti ve 15 gün içinde eksitus oldu. Orbital metastatik tümörlerin tedavisi; lokal tedaviler (cerrahi ve radyoterapi), sistemik tedaviler (kemoterapi, biyolojik ve hormonal tedaviler) ve palyatif yöntemlerin (kortikosteroid temelli tedaviler) birlikte katılımı ile multidisipliner olarak yapılmalıdır ancak hastalığın yaygın hale gelmiş olması sebebiyle hastalık kötü prognozludur.

## Özet

Orbital metastasis in solid (non-hematological) tumors is very rare in clinical oncology. It usually accompanies with extensive metastases of the cancer; so that the prognosis of the disease is very poor. The most common tumors with orbital metastasis are listed as breast cancer, lung cancer, melanoma, and prostatic cancer.<sup>1,2</sup> In the case of colon carcinoma, orbital metastasis is unlikely to occur. Our case is the 12th one reporting colorectal malignancies metastatic to the orbit that have been described in the literature. This report focuses on the treatment options of orbital metastasis.

## Case Presentation

A 60-year-old woman with stage IV colon adenocarcinoma was admitted due to conjunctival chemosis, severe exophthalmos, ptosis, and limitation of movement on the left eye. Brain T1-weighted signal magnetic resonance imaging (MRI) revealed a 35x21 mm soft tissue mass in the left orbita. Eye examination was performed by an ophthalmologist and the lesion was decided as orbital metastasis. Biopsy was recommended from the lesion, but refused by the patient (Figure 1).



The patient was diagnosed with colon adenocarcinoma by colonoscopic biopsy in August 2010. Left supraclavicular and axillary lymphadenopathy were detected as a result of the physical examination at that time. In addition, chest and

abdomen computed tomography (CT) scan revealed multiple metastatic lesions on liver. The patient underwent 4 cycles of chemotherapy with FOLFIRI (folinic acid, 5-FU, and irinotecan) regimen, yet, the disease progressed to the liver lesions that had been previously determined by CT. Afterwards, she received eleven cycles of CAPOX (capecitabine and oxaliplatin) regimen until the next progression. The diagnosis was confirmed with the pathologic study of the biopsy specimens from the ulcerative lesion in the caecum in a follow-up colonoscopy as colon adenocarcinoma. Before receiving the third line of treatment, patient's complaints had developed. Therefore, palliative treatment that mainly includes corticosteroids were administered in order to suppress oedema and inflammation. There was no additional regimen offered since the patient refused to obtain further treatment. Therefore, she was discharged from the hospital at her own request, and she died 15 days after orbital metastasis was detected.

## Discussion

Carcinoma of the gastrointestinal tract rarely metastasizes to the orbit and the metastasis from the colon is very uncommon. One large series of 227 cases of eye and orbit metastases includes only two cases of primary colon carcinomas.<sup>3</sup> In another series of 128 cases with orbital metastases, just a single colon cancer patient was reported.<sup>1</sup> Our case is the 12th one reporting colorectal malignancies metastatic to the orbit that have been described in the literature. The clinical representations of metastatic orbital tumors are summarized as diplopia, pain, proptosis, strabismus, and visual loss, justifying the clinical observations of the patient represented above.<sup>2</sup> In terms of diagnostic modalities, brain CT or MRI imaging are shown to be useful tools enabling the localization of the tumor within the orbita, and demonstrating skeletal invasion.<sup>2</sup>

The management of orbital metastasis depends on the patient's general health, the presence of other metastases, and the tumor response status to specific treatments. The treatment of metastatic orbital tumors is often multidisciplinary; combining local treatments (surgery and radiotherapy), systemic treatments (chemotherapy, biological and hormonal therapies), and palliative approaches (mainly based on corticosteroids) together.<sup>2,4</sup> Although, local control can be achieved with enucleation and/or orbital irradiation, generally, the di-

sease has poor prognosis due to dissemination of the cancer.<sup>4</sup>

Radiotherapy is the standard treatment approach which is aimed at relieving symptoms and preserving visual function in orbital metastatic tumors. External beam radiotherapy, LINAC (linear accelerator), stereotactic radiosurgery (gamma knife, cyberknife), circumscribed proton beam radiotherapy, global photon beam radiotherapy and brachytherapy are radiotherapy options in metastatic orbital tumors.<sup>5</sup> Potential side-effects of radiotherapy include cataract formation, radiation retinopathy, papillopathy, and neovascular glaucoma.<sup>6</sup> Systemic chemotherapy in breast cancer, small cell lung cancer and lymphoma is used to palliate symptoms and may prolong survival. It has shown to be effective in the control of metastases in patients who have previously been demonstrated sensitivity to cytotoxic agents.<sup>7,8</sup> Similarly, hormonal therapy has demonstrated efficacy in patients with hormone-positive breast cancer and prostate tumors.<sup>9,10</sup>

Novel targeted systemic agents such as trastuzumab and lapatinib (in HER2 positive breast cancer)<sup>11-13</sup>, vemurafenib (in melanoma)<sup>14</sup> vismodegib (in basal cell carcinoma)<sup>15</sup>, erlotinib (in cutaneous squamous cell carcinoma)<sup>15</sup> gefitinib, pemetrexet and bevacizumab (in lung adenocarcinoma)<sup>8</sup> have been used in metastatic orbital and eye tumors and shown significant local responses (table 1).

steroids and surgery. In this case, the patient with orbital metastases did not receive specific treatment modalities as she rejected them all.

Table 1. Targeted Agents in Metastatic Orbital Tumors

Targeted agent	Cancer type	Patway
Trastuzumab	Breast Cancer	HER2/neu
Lapatinib	Breast Cancer	HER2/neu & EGFR
Vemurafenib	Melanoma	BRAF
Vismodegib	Basal Cell Carcinoma	Hedgehog Signaling Pathway
Erlotinib	Cutaneous Squamous Cell Carcinoma	EGFR
Gefitinib	Lung Adenocarcinoma	EGFR
Bevacizumab	Lung Adenocarcinoma	VEGFR

Radiotherapy is the most commonly used treatment option in the literature for colorectal cancers with orbital metastasis. The second most common method of treatment is corticosteroids



## References

1. Amemiya T, Hayashida H, Dake Y. Metastatic orbital tumors in Japan: a review of the literature. *Ophthalmic Epidemiol.* 2002;9 (1) :35-47.
2. Valenzuela AA, Archibald CW, Fleming B, Ong L, O'Donnell B, Crompton J J, et al. Orbital metastasis: clinical features, management and outcome. *Orbit.* 2009;28 (2-3) :153-9.
3. Ferry A, Font R. Carcinoma metastatic to the eye and orbit: a clinicopathological study of 227 cases. *Arch Ophthalmol.* 1974 Oct;92 (4) :276-86.
4. García-Fernández M, Castro-Navarro J, Saiz-Ayala A, Álvarez-Fernández C. Orbital metastases in colorectal cancer: a case report. *Arch Soc Esp Oftalmol.* 2012;87 (7) :216-9.
5. Tunc M. Current Diagnostic and Management Methods in Orbital Tumors. *Turk J Ophthalmol* 2014;44 (Özel Sayı) : 1-7
6. S. B. Rudoler MD, C. L. Shields MD, J. A. Shields MD. Radiation Therapy of Uveal and Orbital Metastases. *Radiotherapy of Intraocular and Orbital Tumors Medical Radiology* 2003, pp 87-93.
7. Demirci H, Shields CL, Chao AN, Shields JA. Uveal metastasis from breast cancer in 264 patients. *Am J Ophthalmol.* 2003;136 (2) :264-71.
8. Koma Y, Goto K, Yoshida C, Kimura K, Matsumoto Y, Koyama M, et al. Orbital metastasis secondary to pulmonary adenocarcinoma treated with gefitinib: a case report. *J Med Case Rep.* 2012;18 (6) :353.
9. Saitoh A., Amemia T., Tsuda N. Metastases of breast carcinoma to eyelid and orbit of a postmenopausal woman; good response to tamoxifen therapy. *Ophthalmologica.* 1997;211 (6) :362-6.
10. El Mejjad A, Jouhadi H, Fekak H, Rabii R, Bennani S, Benider A, et al. Orbital metastasis of prostatic carcinoma. *Prog Urol.* 2005;15 (1) :85-8.
11. Papageorgiou KI, Sinha A, Ioannidis AS, Davidson NG. Ocular metastases from HER2 positive breast carcinoma and the response to combination therapy with Paclitaxel and Trastuzumab: A case report. *Cases J.* 2009;4 (2) :9143.
12. Wong ZW, Phillips SJ, Ellis MJ. Dramatic response of choroidal metastases from breast cancer to a combination of trastuzumab and vinorelbine. *Breast J.* 2004 ;10 (1) :54-6.
13. Ju UH, Tsai ML, Lin CS, Chao TY, Dai MS. Lapatinib and platinum-based chemotherapy ameliorate breast cancer with choroidal metastasis and restore visual acuity. *Tumori.* 2014;100 (3) :e67-9.
14. Ngo E, Hutchins LF, Gardner JM, Uwaydat SH. Regression of orbital and choroidal metastases from melanoma after treatment with vemurafenib. *Can J Ophthalmol.* 2014;49 (2) :e49-52.
15. Yin VT, Pfeiffer ML, Esmali B. Targeted Therapy for Orbital and Periocular Basal Cell Carcinoma and Squamous Cell Carcinoma. *Ophthalm Plast Reconstr Surg.* 2013;29 (2) :87-92.