

THE INTERNATIONAL JOURNAL OF SCIENCE & TECHNOLEDGE

Optic Disc Metastasis in Known Case of Carcinoma Prostate

Dr. J. M. Lokabhi Reddy

Associate Professor, Department of Ophthalmology, Sarojini Devi Eye Hospital, Hyderabad, A.P., India

Dr. Adilaxmi

Radiation Oncologist, MNJ Institute of Oncology, Hyderabad, Andhra Pradesh, India

Dr. C. Sanjeeva Kumari

Medical Oncologist, KIMS, Hyderabad, Andhra Pradesh, India

Abstract:

Optic Disc Metastasis is rare and amounts only 4-5 % of Ocular metastasis. Cancers of Breast and Lung constitute most of the Primaries which metastasize to Eye. Prostatic Carcinoma is the most common carcinoma in Men in Western countries. In India it is 6th common Cancers in Men. Distant metastasis to Bone from Carcinoma Prostate is most common. Optic nerve involvement from Prostatic Adeno carcinoma is rare and includes spread to the Uvea, Orbit and Pituitary region. We report a rare case of Carcinoma Prostate with bone metastasis presenting with unilateral visual loss. Patient was found to have Right optic Disc metastasis. Intra ocular Bevacizumab tried to control the disease.

Keywords: *Optic disc metastasis, carcinoma prostate, intra vitreal avastin*

1. Introduction

Incidence of Metastases to Eye & Orbit in Cancer Patients is relatively rare. Gross metastatic lesions were found in 1- 4%, Histologic Metastases to eye were found in about 12% of patients who died of Cancer [1]. The choroid is the most common ophthalmic site for metastatic disease and it is postulated that hematogenous dissemination of metastasis from remote major sites typically leads to the high flow choroidal vasculature with metastatic disease [2-6]. The choroid provides a vascular avenue for tumor emboli to sequester and allows an environment receptive to growth [7]. The common primary tumors, with ocular or orbital metastasis are from the Breast, Lungs or Gastro intestinal tract in 70 % of cases. Rarely from Prostate, Stomach, Malignant Melanoma of the Skin, Testis, Pancreas, Bladder. It can occur as invasion from a Juxtapapillary Choroidal metastasis or as Isolated Optic Disc metastasis.

2. Case Details

56 year old male patient, a known case of Carcinoma Prostate with Bone metastasis under treatment with an Oncologist, was referred for pain less gradual fall of vision in the Right Eye since 1 month.



Figure 1: Right Eye Fundus at Presentation

On Examination, Best Corrected Vision in Right Eye was 6/60 and in Left eye it was 6/6. Anterior segment in both Eyes normal findings with RAPD in Right Eye. Fundus examination of Right Eye shows clear Media. Disc margins were blurred. A Grayish

yellow lesion over the disc obscuring the disc details. Flashes happened hemorrhages present over and around the lesion. Venous engorgement present with per papillary Retinal edema. Left Eye Fundus normal.

Visual fields in Right showed error due to low vision and in the Left Eye it was normal.

A Provisional Diagnosis of Optic disc metastasis in Right Eye was made due to the presence of the History of Carcinoma Prostate.

Case was discussed with the Oncologists and planned for Intra Vitreal injection of Bevacizumab. Patient received 2 doses of Inj. Bevacucimab 1.25 mg in 0.1ml with 4 weeks gap. Patient was also on Systemic Chemotherapy with Oncologist.

Patient was reviewed in 2 weeks intervals. There was an increase in the size of the Lesion with a diffuse spread in choroid level and Vision was deteriorating. 2nd Dose of Avastin was given with a guarded prognosis. Visual defect worsened with complete loss of vision in Right eye 4-5 weeks. We explained regarding the Poor Visual Prognosis. Patient did not turn up for further follow up as there were no other Ocular symptoms...

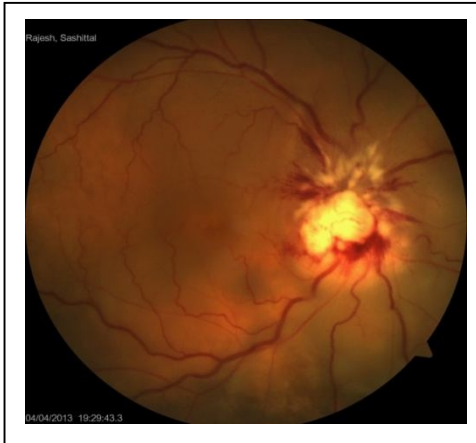


Figure 2: 3 weeks after 1st Dose of Avastin



Figure 3: Non responding Progressive Lesion

We have tried to contact the patient and were informed about his demise, due to Cancer.

3. Discussion

Carcinoma Prostate is one of the common malignancies in elderly males. It Spreads by Direct invasion, Hematogenous spread and by Lymphatic system. Metastasis of Prostate carcinoma to the Eye is very uncommon and to Optic disc is Rare.

In a study of 660 consecutively evaluated patients with Intraocular Metastasis, 30 (4.5%) had metastasis to the Optic disc [2]. 24 (80%) were women and 6 (20 %) were men. The primary neoplasm was in the Breast in 13 patients (43 %), in the lung 8 (27%), in the intestine in 1(3 %), in the kidney in 1(3%), and in the Prostate in 1 (3%).

- The optic disc Metastasis is Unilateral in 29 patients (97%) and in Bilateral in 1 (3%).
- The primary site is never determined in 20% of patients.

The characteristic clinical features of optic disc metastasis should help differentiate it from other causes of swollen optic disc. Visual loss is usually the first symptom of Disc metastasis, which usually progresses slowly. Sometimes Disc is swollen diffusely or may show yellowish white mass lesion with venous engorgement and signs of venous occlusion. Associated lesions may be seen in Choroid and Serous retinal detachment.

A patient initially presented with an occlusion of a branch of the central retinal artery. Shortly thereafter he developed a central vein obstruction and a swollen optic nerve head. Enucleation and subsequent studies revealed that an adenocarcinoma had metastasized to the optic nerve and that it originated from the prostate gland. [5]

Isolated cases of metastasis involving the optic disc have been published, but there have been no reports of large series of cases [6-18]. Differential Diagnoses - Papilledema, TB/ sarcoid Granuloma xanthogranuloma, Macro aneurysm should be kept in mind and to be excluded.

Diagnostic testing - Biopsy usually not possible. If there is no History of Cancer, the Thorough Systemic workup is a must to identify the Primary.

The management of the isolated ocular metastasis is Observation, External Radiotherapy, Chemo therapy or Enucleation for severe ocular pain. The metastasis to the optic Disc can lead to severe loss of vision if not treated early. The prognosis for patients with optic disc metastasis with systemic disease is poor with a survival of 5-9 month [4]

3.1. Intravitreal Antivascular Endothelial Growth Factor Injection

Intravitreal antivascular endothelial growth factor (VEGF) injections have redirected the management of neovascularocular conditions. With the dependence of metastases on neo-vascularization for growth, the use of intravitreal bevacizumab and ranibizumab to prevent angiogenesis is an effective modality of treatment. [19-26]. Successful management of metastases from breast, lung, and colorectal carcinomas has been documented with primary ocular therapy of anti-VEGF injections. Injections are typically given every 1-3 months, depending on tumor response, with regression noted on a follow-up period ranging from 4 to 22 months [27-30].

4. Conclusion

We have reported a Case of Optic Disc Metastasis, with Prostatic Carcinoma in Stage 4 on treatment. We tried Intra Vitreal Anti VEGF agent (Avastin) to retain the Residual Vision. But the Metastatic lesion was aggressive and Patient has lost vision. He also had systemic secondaries which were not responding to Chemotherapy and succumbed to the Disease. Whatever the treatment given disc secondaries signal the Poor prognosis for Vision and life.

- Acknowledgements: Special Thanks to Dr. R.V. Rao, Medical Oncologist, KIMS, Hyderabad for the guidance.

5. References

- i. Metastatic neoplasms of the Optic Disc AMA Ophthalmology, February 2000, Vol118, No2. The 1999 Bjerrum lecture: Part 2 Jerry A Shields , MD: Carol I. Shields MD, Arun D ,Singh, MD
- ii. Shields JA, Shields CL, Singh AD. Metastatic neoplasms in the optic disc: the 1999 Bjerrum Lecture: part 2. Arch Ophthalmol 2000; 118: 217–224.
- iii. Ferry P, Font RL. Carcinoma metastatic to the eye and orbit.I, A clinic pathological study in 227 cases. Arch oh Ophthalmology. 1974; 92(4):276-86.
- iv. Zappia RJSmith MEGay AJ Prostatic carcinoma metastatic to optic nerve and choroid. Arch Ophthalmol. 1972;87642- 645
- v. Ballantyne AJ A case of metastatic sarcoma of the optic nerve and retina. Trans Ophthalmol Soc U K. 1906;26111- 122
- vi. Davis WT Metastatic carcinoma of the optic disk. Arch Ophthalmol. 1932;8226- 237
- vii. McDannald CEPayne BF Metastatic carcinoma to the optic nerve and choroid. Arch Ophthalmol. 1934;1286- 92
- viii. van Wien SSchoch D Bilateral metastatic carcinoma to choroid and optic nerves. Am J Ophthalmol. 1957;43723- 730
- ix. Norton HJ Adenocarcinoma metastatic to the distal nerve and optic disc. Am J Ophthalmol. 1959;47195- 199
- x. Cherington FJ Metastatic adenocarcinoma of the optic nerve head and adjacent retina. Br J Ophthalmol. 1961;45227- 230
- xi. Nicholls JVV Metastatic carcinoma of the optic nerve: report of two cases. Trans Can Ophthalmol Soc. 1961;2418- 27
- xii. Ring HG Pancreatic carcinoma with metastasis to the optic nerve. Arch Ophthalmol. 1967;77798- 800
- xiii. Ginsberg JFreemond ASCalhoun JB Optic nerve involvement in metastatic tumors. Ann Ophthalmol. 1970;2604- 617
- xiv. Zappia RJSmith MEGay AJ Prostatic carcinoma metastatic to optic nerve and choroid. Arch Ophthalmol. 1972;87642- 645
- xv. Gallie BLGraham JEHunter WS Optic nerve head metastasis. Arch Ophthalmol. 1975;93983- 986
- xvi. Arnold ACHepler RSFoos RY Isolated metastasis to the optic nerve. Surv Ophthalmol. 1981;2675- 83
- xvii. Tagaki TYamaguchi TMizoguchi TAmemiya T A case of metastatic optic nerve head and retinal carcinoma with vitreous seeds. Ophthalmologica. 1989;199123- 126
- xviii. Pollock SCAwh CCDutton JJ Cutaneous melanoma metastatic to the optic disc and vitreous. Arch Ophthalmol. 1991;1091352- 1354
- xix. Detorakis ET, Agorogiannis G, Drakonaki EE, Tsilimbaris MK, Pallikaris IG. Successful management of choroidal metastasis with intravitreal ranibizumab injections. Ophthalmic Surg Lasers Imaging 2012;43 Online: e47-51
- xx. Amselem L, Cervera E, Díaz-Llopis M, Montero J, Garcia-Pous M, Udaondo P, et al. Intravitreal bevacizumab (Avastin) for choroidal metastasis secondary to breast carcinoma: Short-term follow-up. Eye (Lond) 2007;21:566-7
- xxi. Kuo IC, Haller JA, Maffrand R, Sambuelli RH, Reviglio VE. Regression of a subfoveal choroidal metastasis of colorectal carcinoma after intravitreal bevacizumab treatment. Arch Ophthalmol 2008;126:1311=3.
- xxii. Kim SW, Kim MJ, Huh K, Oh J. Complete regression of choroidal metastasis secondary to non-small-cell lung cancer with intravitreal bevacizumab and oral erlotinib combination therapy. Ophthalmologica 2009;223:411-3.
- xxiii. Mansour AM, Alameddine R. Intravitreal bevacizumab for consecutive multiple choroidal breast metastatic lesions. BMJ Case Rep 2012; 2012.
- xxiv. Yao HY, Horng CT, Chen JT, Tsai ML. Regression of choroidal metastasis secondary to breast carcinoma with adjuvant intravitreal [Downloaded free from <http://www.ijo.in> on Friday, April 24, 2015, IP: 49.206.10.240]
- xxv. Lai CL, Fan KS, Lee YH, Chen HC, Fan WH. Intravitreal administration of bevacizumab in the treatment of choroidal metastasis in a patient with erlotinib-failed pulmonary adenocarcinoma. Lung Cancer 2012;76:496-8
- xxvi. Tolentino M. Systemic and ocular safety of intravitreal anti-VEGF therapies for ocular neovascular disease. Surv Ophthalmol 2011;56:95-113
- xxvii. Freedman MI, Folk JC. Metastatic tumors to the eye and orbit. Patient survival and clinical characteristics. Arch Ophthalmol 1987; 105:1215-9.
- xxviii. Albert DM, Rubenstein RA, Scheie HG. Tumor metastasis to the eye. I. Incidence in 213 adult patients with generalized malignancy. Am J Ophthalmol 1967;63:723-6
- xxix. Chen CJ, McCoy AN, Brahmer J, Handa JT. Emerging treatments for choroidal metastases. Surv Ophthalmol 2011;56:511-21
- xxx. Lin CJ, Li KH, Hwang JF, Chen SN. The effect of intravitreal bevacizumab treatment on choroidal metastasis of colon adenocarcinoma – case report. Eye (Lond) 2010; 24:1102-3.