Photodynamic therapy with Verteporfin in subfoveal choroidal metastasis of breast carcinoma (A controlled case)

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Abstract

A 55-year old woman with growing unilateral subfoveal choroidal metastasis of breast carcinoma was treated by photodynamic therapy (PDT) with verteporfin. Best corrected visual acuity remained stable during the whole follow-up of 6 months. Tumor flattened from 2.2 mm to 0 mm on ultrasound one month after the therapy. PDT with verteporfin appears to be the best tolerated method for palliative treatment of growing subfoveal choroidal metastasis of the breast carcinoma.

CASE REPORT

Introduction

Intraocular metastasis is found in 4.6% of female patients with a breast cancer [7]. It has a tendency to affect the posterior choroid, frequently in the macular area and causes a secondary serous retinal detachment with subsequent visual loss. There is a risk of development of absolute glaucoma with a painful globe [3]. The treatment options to manage these tumors include chemotherapy [6] and hormonal therapy [4]. Some individuals occasionally can be effectively treated by laser photocoagulation [8], transpupillary thermotherapy (TTT) alone [11] or TTT augmented by indocyanine green [10] and radiotherapy (external beam radiation [1] or stereotactic radiation therapy [2]).

Case report

A 55-year old woman with subfoveal choroidal metastasis of breast carcinoma on the left eye was referred to our oncology clinic. She complained of 5 months lasting decreased vision. She had had diagnosed breast carcinoma (solid medullar carcinoma, T2N1M1, clinical staging IV) 7 years ago and was treated by the surgery (ablation and exenteration of the axilla), radiotherapy, chemotherapy, hormonal therapy and ovarectomy. The right cerebellar hemisphere metastasis of 20 mm was found prior to this referral to us. External brain irradiation (30 Gy of the total dose divided to 10 sessions) was performed 1 month ago and the patient was put on systemic antioedematous therapy with dexamethasone. Best

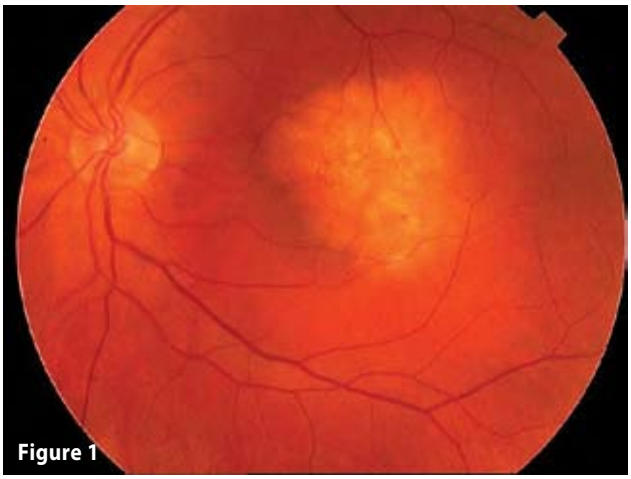
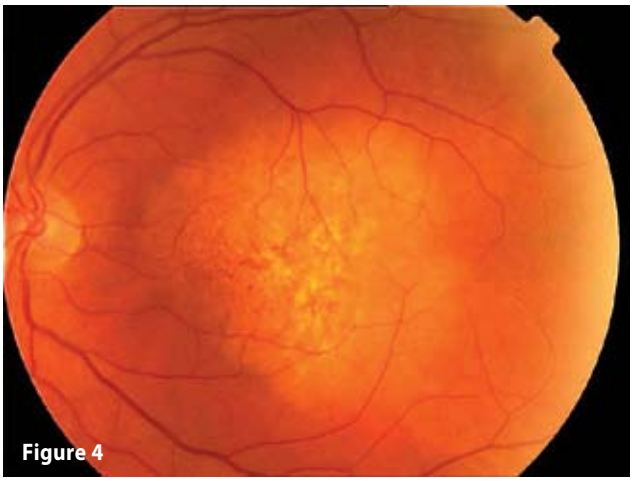


Figure 1



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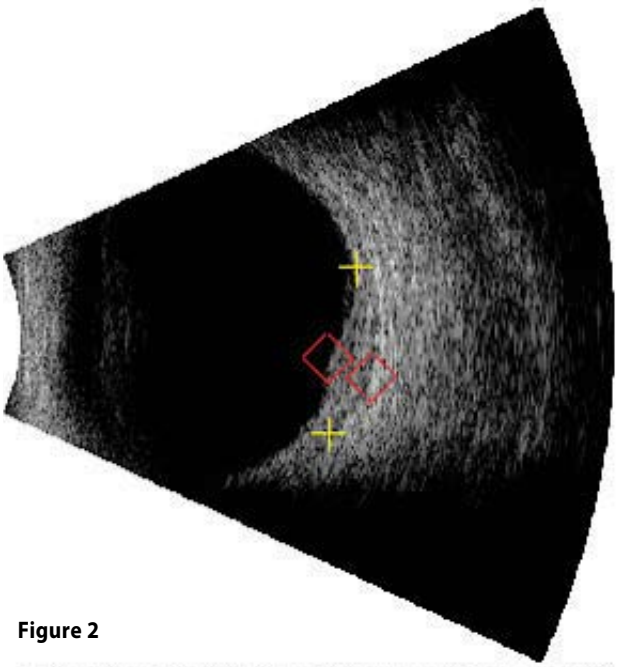


Figure 2

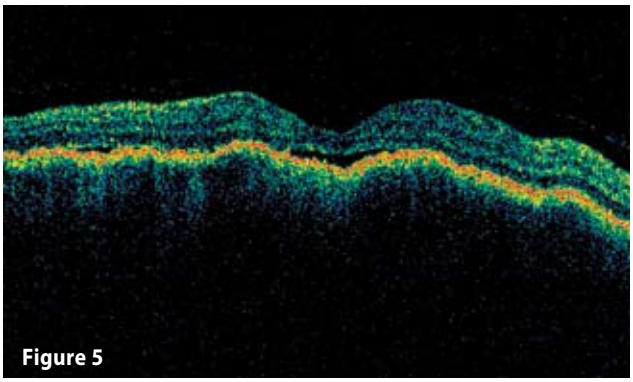


Figure 5

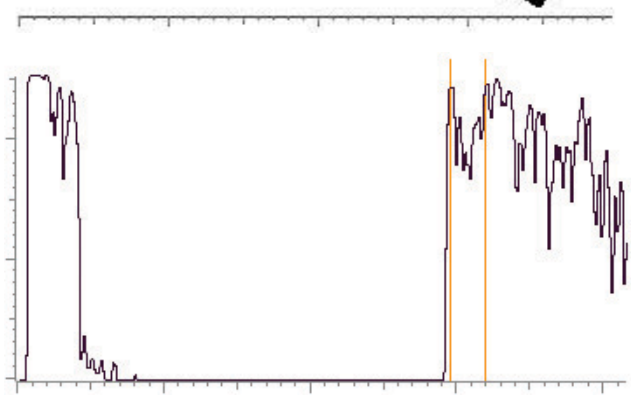


Figure 3

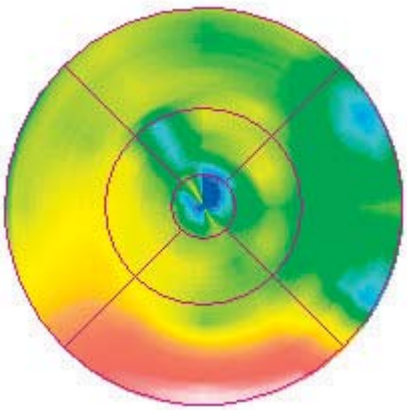
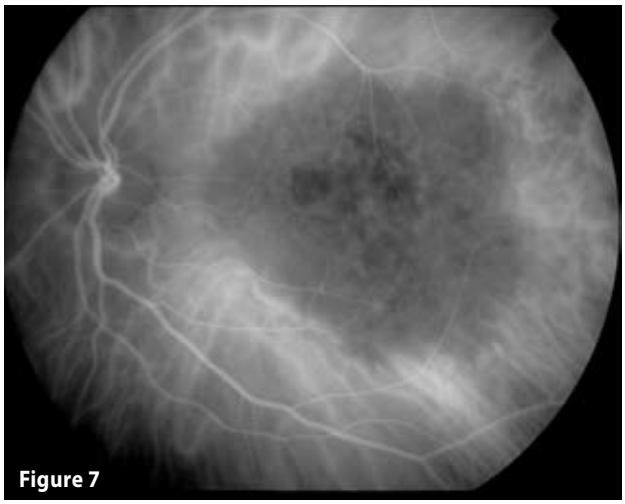


Figure 6

Figure 1. Color fundus photograph at the presentation.
Figure 2. B-scan US at the presentation.
Figure 3. A-scan US at the presentation.
Figure 4. Color fundus photograph one month after.
Figure 5. OCT (90 degrees scan) one month after.
Figure 6. OCT map one month after.

corrected visual acuity (BCVA) was OD 4/4 (0 dioptries of spheric equivalent, SE), OS counting fingers (+3.50 dioptries of SE), intraocular pressure (IOP) was 15 and 16 mmHg respectively. Anterior segment was bilaterally normal. Subretinal nonpigmented dome shaped lesion occupying center and temporal half of the macula was found on the fundus of OS (Figure 1). Thickness of the tumor was 2.2 mm on standardized ultrasound (US) with high internal reflectivity (Figures 2, 3). The tumor base has grown towards the optic disc one month after (Figure 4). Optical coherence tomography (OCT) revealed fluid subfoveally and in the lower part of the macula (Figures 5, 6). Value of the oncomarker CA 15-3 was 165.5. No other pathology was found during the fol-



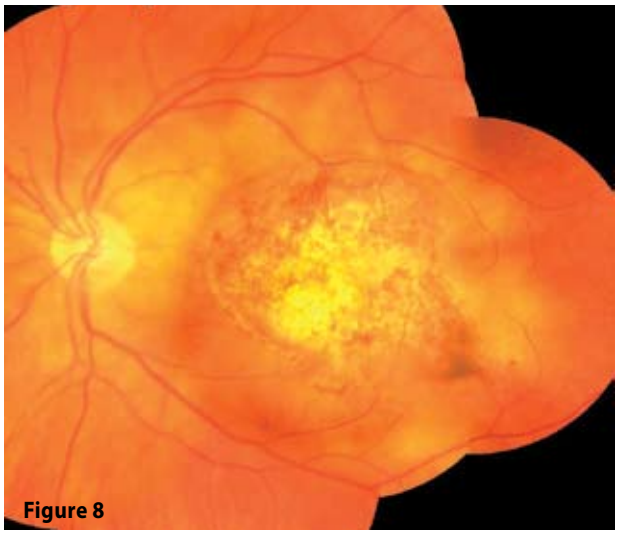


Figure 7. ICGA before treatment.
Figure 8. Composed color fundus photograph four months after the first session of Rx.
Figure 9. B-scan US 4 months after the first session of Rx.

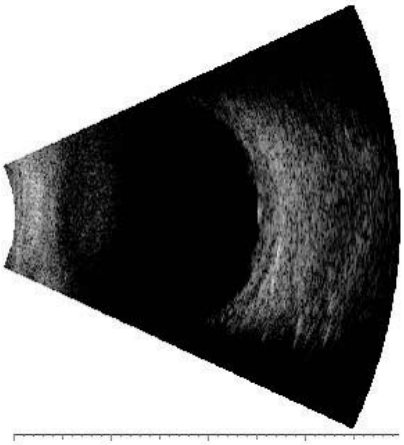
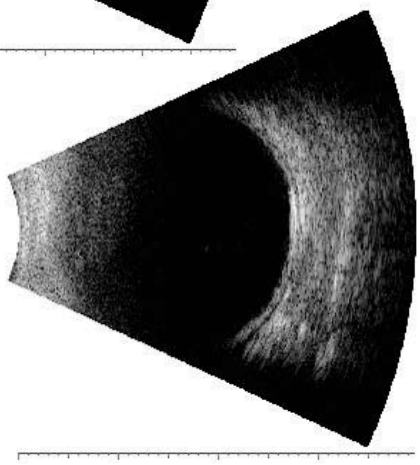


Figure 10. Composed color fundus photograph one month after the second session of Rx
Figure 11. B-scan US one month after the second session of Rx



lowing examinations: liver tests, blood count and urine. Oncologists ruled out another course of chemotherapy as it was highly likely to be ineffective. The patient refused radiation treatment.

The local ethical committee approved the treatment and the patient signed a written informed consent. The border of the hypofluorescent area on indocyanine green angiography (ICGA) (Figure 7) was defined and than overlaid to the snapshot picture. Photodynamic therapy (PDT) with verteporfin (Visudyne®, Novartis, Switzerland) using standardized protocol for age-related macular degeneration was performed to treat the whole lesion of the tumor with a 500 mikrom safety margin (Visulas 690s, version 2.8, Zeiss, Germany). Second session was indicated 4 months after due to the local recurrence (Figures 8, 9). The patient was followed up another 2 months, after that she died.

BCVA remained stable during the whole follow-up. There was atrofic chorioretinal scar at the treating area one month after the second session of the therapy (Figure 10). The tumor flattened to 0 mm on US (Figure 11). The retina remained attached, IOP was normal, SE

decreased to final –1.25 dioptries. Value of oncomarker CA 15-3 increased to 283.8.

Discussion

Two cases of PDT with verteporfin in choroidal metastasis from carcinoid tumor [5] and lung adenocarcinoma [9] were published recently. The later was similar to our case as the PDT with verteporfin was used as primary treatment and followed up for 6 months with excellent outcome. Surprisingly, the authors do not propose PDT with verteporfin as a standard treatment for similar cases.

We believe that the most important factor for any treatment decision is confirmed growth of such unilateral single tumor because survival of patients often seems to be compromised. For these patients when general status is poor, PDT with verteporfin is probably the least difficult treatment option. It also avoids complications induced by other types of therapy.

In conclusion, PDT with verteporfin appears to be the best tolerated method for palliative treatment of growing subfoveal choroidal metastasis of the breast carcinoma.

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