CASE REPORT

Use of systemic therapy in the treatment of choroidal metastases from breast cancer

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SUMMARY

This is a case report on the use of systemic therapy to successfully regress choroidal metastases due to breast cancer. The choroid is the commonest site for intraocular metastatic disease. Breast and lung cancer are frequently the primary malignancies. Traditionally, choroidal metastases are treated with local therapy to the eye including using either external beam radiotherapy, brachytherapy or, recently, with photodynamic therapy. We report on the impressive results obtained with the use of palliative paclitaxel chemotherapy and trastuzumab after only 8 weeks. Funduscopy images and ultrasound findings support this.

BACKGROUND

Breast cancer is the commonest cancer affecting women and with advances in treatment women are living longer and disseminated disease is becoming more widespread. In women, it is the most common tumour to metastasise to the uvea, accounting for 39–49% of all uveal metastases. Uveal metastases often present with painless blurred vision, although studies have reported a 0–10% incidence rate of asymptomatic lesions in women with metastatic breast cancer. Treatment depends on the general health of the patient, visual symptoms, tumour size, and the presence and activity of other metastases. Commonly, choroidal metastases are treated with external beam radiotherapy or photodynamic therapy,¹ especially if there is no evidence of systemic metastases.

Systemic therapy with hormones or chemotherapy is proven to be effective and represents a better alternative when disease is more widespread.^{2–4} This case is unique in that it demonstrates in photographic form the efficacy of systemic therapy in the treatment of choroidal metastases in a relatively short period of time while maintaining visual acuity and quality of life. The patient has also been followed up for over 18 months and continues to show complete regression of the uveal metastases following treatment with chemotherapy and the biological agent trastuzumab (Herceptin).

CASE PRESENTATION

A 67-year-old woman with a history of estrogen receptor (ER)-positive and HER2-positive breast cancer treated with surgery, postoperative radiotherapy, chemotherapy, Herceptin and 5 years of adjuvant hormonal therapy, presented with visual disturbances. Choroidal metastases were confirmed by an ocular oncologist. Subsequent investigations

revealed bone, liver and lung metastases from an ER-positive and HER2-positive breast cancer.

INVESTIGATIONS

On examination at presentation, her best corrected visual acuity was 6/18 in the right eye and 6/6 in the left eye. On funduscopy, two discrete creamy elevated lesions were noted at the posterior pole of the right eye. The lesions measured approximately 1.5 mm thick on ultrasonography with high internal reflectivity. The appearances were consistent with choroidal metastases.

TREATMENT

The patient was started on weekly paclitaxel chemotherapy and three weekly trastuzumab (Herceptin) in March 2012. [Figure 1](#) is the image taken on presentation. By May 2012, the choroidal metastases had regressed significantly with a thickness of 0.4 mm on ultrasonography ([figure 2](#)). Visual acuity was preserved. The patient completed paclitaxel chemotherapy at the end of June 2012 and remains on a three weekly palliative regimen of trastuzumab and tamoxifen. Subsequent ophthalmology review at 6, 12 and 18 months ([figure 3](#)) confirmed complete regression of the metastases with evidence of atrophic looking scars at the site of the previous metastases. No new ocular metastases were identified.

OUTCOME AND FOLLOW-UP

The patient's systemic disease responded to the treatment regimen with a reduction in the size of the liver and lung metastases and regression of the choroidal metastases with preservation of visual acuity.

Figure 1 Choroidal metastases on presentation.

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Figure 2 Choroidal metastases after 2 months of treatment.

DISCUSSION

Systemic chemotherapy is an effective alternative treatment to external beam radiotherapy when breast cancer is disseminated. In our case we observed a rapid and sustained response to

Figure 3 Choroidal metastases after 18 months of treatment.

systemic chemotherapy and biological agent with regression of choroidal metastases within 2 months and no recurrence at 18 months, with preservation of the patient's visual acuity. Her disease continues to be controlled on the current maintenance treatment regimen of trastuzumab and tamoxifen.

Patients with choroidal metastases from breast cancer have a poor prognosis with a mean survival of approximately 21 months from diagnosis.^{2–3} The role of screening has been considered in a number of recent studies, which have reported the incidence rates of asymptomatic lesions in patients with breast cancer as low as 0%, while older series have reported incidence as high as 9%.^{4–5} The low incidence rates, however, probably reflect advances in systemic therapies to which choroidal metastases are sensitive. The taxane chemotherapy group in particular, which this patient received, is known to penetrate choroidal tissue and is often a commonly used regimen in metastatic breast cancer. It is because of the low incidence rates that screening for early detection of choroidal metastasis among these patients, even though it would lead to early implementation of appropriate, often vision saving therapeutic management, is not cost-effective or practical.⁶

Learning points

- ▶ Breast cancer in women is the commonest cancer to metastasise to the eye.
- ▶ Suspect choroidal metastases in patients presenting with blurred vision and a history of breast cancer.
- ▶ Initiate prompt assessment and treatment to preserve vision.
- ▶ Consider systemic therapy particularly if disease is disseminated.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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