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A case of choroidal metastasis in a male breast cancer

Przypadek przerzutu nowotworu piersi do naczyniówki u mężczyzny

Oleksy Piotr, Pogrzebielski Arkadiusz, Karska-Basta Izabella, Romanowska-Dixon Bożena

Department of Ophthalmology, Clinic of Ophthalmology and Ocular Oncology,
Jagiellonian University, Medical College, Krakow, Poland
Head: Ass. Professor Bożena Romanowska-Dixon, MD, PhD

Summary: Purpose: We present a case of male patient under therapy due to breast cancer with choroid metastasis and exudative retinal detachment in right eye.
Material and methods: A 59 years old male patient was referred with diagnosis of intraocular tumor in right eye. Three years ago radical right-side mastectomy was performed (T2N1M0). The medical history revealed that the patient was under chemo- and hormontherapy due to right breast cancer with lungs, liver and mediastinum metastases.
Based on the ophthalmological examination the diagnosis of intraocular tumor was established – choroidal metastasis with exudative retinal detachment. Due to tumor size and general dissemination external beam irradiation of tumor was performed.
Conclusions: The majority of choroidal metastases in males are secondary to lung carcinoma, however in differential diagnosis it is necessary to consider also rare cases of breast carcinoma metastases. Treatment strategy should be considered individual depending on size, localization, presence of metastases to other organs and general condition of the patient.

Słowa kluczowe: rak sutka, przerzut raka sutka do naczyniówki, wtórne odwarstwienie siatkówki.
Key words: brest cancer, choroidal metastasis, secondary retinal detachment.

Breast cancer is the most common malignancy in females but in rare instances the tumor may be also found in men. Breast cancer is also found in men as a relatively rare entity and usually tardily diagnosed. Choroidal metastases are the most common described intraocular tumors (1,2). Autopsy studies reveal that about 10% of patients with general malignancy had choroidal involvement (3,4). We present a case of male patient under therapy due to breast cancer with choroidal metastasis and secondary retinal detachment.

Case report

In November 2008 a 59 years old Caucasian male was referred the Department of Ophthalmology and Ocular Oncology of Jagiellonian University in Krakow with diagnosis of the right eye choroidal metastasis. He presented sudden visual acuity (VA) loss in right eye (RE) for last two days and he also complained of VA worsening in left eye (LE, lasting about two months. The medical history revealed that the patient was under chemo- and hormontherapy (5) due to right breast cancer with lungs, liver and mediastinum metastasis. Three years ago radical right-side mastectomy was performed (T2N1M0). Best-corrected visual acuity (BCVA) in RE was counting fingers at the distance of 1 meter and 20/20 in the LE. The pupillary reactions were normal. Intraocular pressure (IOP) was 15 mmHg in RE and 10 mmHg in LE. The slit-lamp examination revealed mild conjunctivitis due to chemotherapy. Indirect ophthalmoscopy of RE showed prominent yellowish tumor in the temporal midperiphery extending into the macula. In addition, exudative retinal detachment was present (Fig. 1). B-scan ultrasonography showed a hiperechogenic, dome shaped tumor measuring 16.3 mm x 2.3 mm with secondary retinal detachment and lack of internal vessels (Fig. 2). A-scan echography showed high internal reflectivity. Due to tumor size and general dissemination external beam irradiation of the tumor with 20 Gy in 7 fractions using a lateral field lens-sparing technique was performed. Seven month later was observed regression of the tumor and retinal detachement

Fig. 1. The fundus of the right eye showing tumor and retinal detachement below.
Ryc. 1. Dno oka prawego – guz z towarzyszącym odwarstwieniem siatkówki.

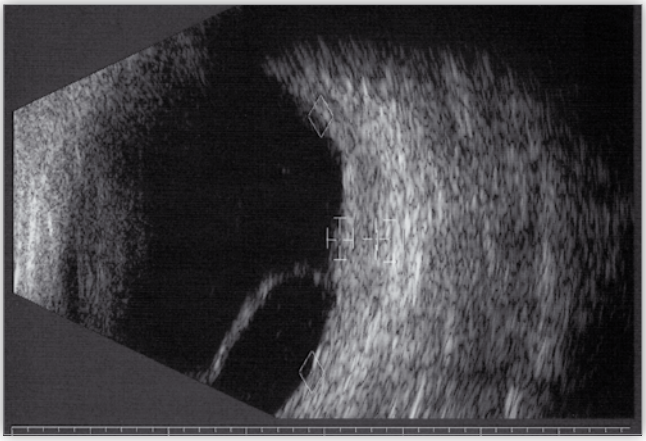

Fig. 2. B-scan ultrasound of flat choroidal tumor with secondary retinal detachment prior to the treatment.
Ryc. 2. Ultrasonografia w prezentacji B ukazująca płaski guz naczyniówki z towarzyszącym wtórnym odwarstwieniem siatkówki przed leczeniem.

Fig. 3. The fundus of the right eye showing flat scar of the tumor.
Ryc. 3. Dno oka prawego – płaska blizna w miejscu guza.

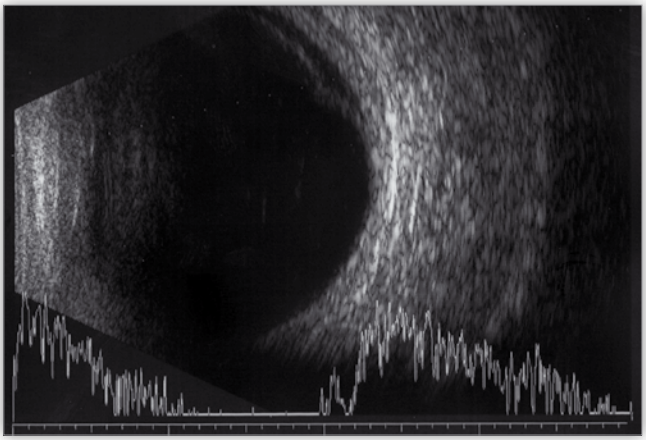

Fig. 4. Regression of metastasis after external beam irradiation.
Ryc. 4. Regresja guza przerzutowego naczyniówki po naświetlaniu ze źródła zewnętrznego.

in RE (Fig. 3, 4). BCVA in RE increased to counting fingers at the distance of 2 meters. IOP was normal. Patient in regular ophtalmological and oncological follow-up.

Discussion

Most patients with diagnosed choroidal metastasis are treated because of systemic malignancy. Shakin et al. (6) confirmed that 75.5% of 200 examined patients with choroidal or optic nerve metastasis had a primary systemic cancer. Over 95% patients with choroidal metastatsis of breast carcinoma have a history of cancer when the diagnosis is established and only 47% of patients with lung cacinoma (7). These data shows that men are less likely to have a diagnosis of cancer when the choroidal metastases are found. Similary, Demirci et al. (8) reported that in 264 cases with choroidal metastasis and prior history of breast carcinoma had already confirmed diagnosis of breast cancer. On average time beetwen diagnosis of breast carcinoma and choroidal metastasis is 24-48 months (7-9). In some cases it can be prolonged even up to 10 years or more (7-8).

The metastatic tumor characteristics depends on primary malignancy. Most metastases are yellow-white flat tumors but some can appear pink or orange ie. metastatic renal cell carcinoma (10), carcinoid tumors or thyroid carcinoma (11), or brownish ie. metastatic cutaneus melanoma (12). Size and hight of tumor may vary but usually they bigger then one disk diameter. 40% of tumors are localized in the macular region. That predilection may be caused by better choroidal circulation. Another explanation is that localization in macula gives earlier symptoms and therefor tumors are detected more often. Multifocal lesions are present in 28% of cases. Bilateral involvment is more common (33% cases), (6,13,14). Serous retinal detachment is commonly found in choroidal metastasis (91%) of patients and usually is well beyond the borders of the tumor itself (14). The most valuable diagnostic tool is B-scan ultrasound which visualizes shape, size, associated retinal detachment and presence or absence of internal vascularity (15). Fluorescein or indocyanine green angiography, magnetic resonance (MRI) or optical coherence tomography (OCT) are also used but of limited value in imaging of choroidal metastasis. Because of the risk of either intraocular or extraocular tumor spread, invasive testing like fine-needle aspiration biopsy, or biopsy with a vitreous cutter are often hesitant to undertake (16,17). There are many essential factors which should be considered individually when determining best treatment strategy, starting from type and stage of the primary malignancy to life expectancy. Among ocular factors which should be taken into consideration are number, size, location of the metastasis and visual impact of the tumors as well as treatment itself. The most commonly performed treatment are external beam radiotherapy (18), episcleral plaque brachytherapy (19) and proton beam therapy (4,5). Transpupillary thermotherapy (TTT) may be useful for small choroidal tumors in the posterior pole (20-23). Photodynamic therapy (PDT) may be indicated in patients with juxtapapillary carcinoid (24). Hormonotherapy or chemotherapy is commonly used to control choroidal metastases. In case of small or asymptomatic (25) choroidal tumors as well as patients whose medical condition is very poor, observation alone may be undertaken. Enucleation as a radicall treatment is reserved for blind, painful eyes usually due to neovascular glaucoma.

Conclusion

The majority of choroidal metastases in males are secondary to lung carcinoma, however in differential diagnosis it is necessary to consider also rare cases of breast carcinoma me-

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tastases. Local treatment strategy should be considered individual depending on size, localization, presence of metastases to other organs and general condition of the patient.

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Reprint requests to/ Adres do korespondencji:
lek. med. Piotr Oleksy
Klinika Okulistyki i Onkologii Okulistycznej
ul. Kopernika 38
31-501 Kraków
e-mail: piotroleksy@yahoo.pl