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Cancer Metastases to the Eye-ball: a Case Report

Przerzuty rakowe do gałki ocznej z podaniem własnego przypadku

Cancer metastases to the eye-ball occur much more frequently than is generally thought. Such cases are testified by ample statistical data (1, 3, 4, 6, 13, 15). However, the data concerning the frequency of the occurrence of cancer metastases to the eye-ball are divergent. Godtfredsen has reported (5, 6) that such metastases are only 1/3 to 1/2 as frequent than primary malignant neoplasms of this organ. In the large material of Greer (8, 9) cancer metastases to the eye-ball constituted only 1/10 of the reported carcinomas of the eye-ball. These divergencies probably result from the fact that metastases to the eye-ball can be relatively easily neglected during general examinations in a generalized neoplastic process, and even in necropsy, the eye-ball is rarely an object of anatomico-pathological examinations (10). On the other hand metastatic neoplasm found in the eye-ball can call attention to a clinically undiagnosed primary malignant lung or breast tumour.

The most frequent metastatic neoplasms of the eye-ball are cancers (3, 4, 7, 11), whereas others, including metastatic melanomas and lymphomas are very rare. Cancer originates in the mamma in 60—70%, the lung in 10—15%, and the digestive duct in about 7%. From the old but extensive record of Usher (15) it appears that cancers of the kidney, prostate, testicle and thyroid gland can result in metastases to the eye-ball. According to Godtfredsen (5, 6) lung cancer results in metastases to the choroid as frequently as breast cancer whereas Silverberg (13) has the opinion that metastases to the eye-ball in men come more frequently from lung cancer, while in women from breast cancer. Metastases to the eye-ball are usually unilateral, but in 25% of cases they occur bilaterally (10). Anatomico-pathological examinations of eye-balls with cancer metastases may show various degrees of changes depending on the development

of the neoplastic process; from an extensively infiltrating intraocular tumour to almost invisible flat prominences of the posterior part of the choroid. Sometimes only selected, suspected, serially sectioned segments show cancer cells in histopathological examinations. Cancer cells infiltrate mainly the choroid, rarely the retina, and cancer metastases in the iris are also rarely observed. The histopathological texture of metastatic cancers in the eye-ball depends on the kind of cancer in the primary focus: it is often identical or similar to the primary tumour. Sometimes however, due to anaplasia it is not possible to localize the primary cancer on the basis of the histopathological picture of the metastasis in the eye-ball.

Our case (H. J.) concerns a 63-year old woman operated for a breast tumour in the Oncological Hospital, in Lublin in 1987. A radical mastectomy, together with revision of the axillary pit, were performed. The tumour was histopathologically diagnosed (Dr. S. Czuczwar) as *carcinoma infiltrans desmoplasticum. Carcinoma microcellulare minifocale et dispersum*. Bloom I. (histopath. exam. no. 67496-501, Fig. 1). No cancer metastases were found in the examined lymphatic nodes. In May 1989, the patient was admitted to the Ophthalmological Clinic of the Medical Academy in Lublin because of deteriorated acuity of vision. The ophthalmological examination showed the right eye without pathological changes: Vis. oc. dex. = 5/5. T. sc. dex. = 18 mm Hg. The left eye—irritation of the eye-ball; the cornea normal, the anterior chamber normally deep; the chamber liquid—turbid; the pupil medium wide; the iris congested with a blurred outline, fine single pink-grey tubercles were seen on its surface partially entering the sphere of pupil; single fine and larger opacities appeared in the vitreous. Relatively numerous whitish-grey prominences with a smooth surface were seen in the fundus near the optic papilla and upwards, and were surrounded from below by a slightly elevated retina. Vis. oc. sin. = 3/50. T. oc. sin. = 37 mm Hg. The urine analysis, blood picture, blood count, glucose level and cholesterol level in the blood were in the norm limits. X-ray examination of the sinuses and chest did not show any changes.

An ultrasonographic examination of the left eye-ball carried out by system A did not show any features indicating the presence of compacted tissue in it. Echos typical for flat wise detached retinas occurred in the posterior pole. Computer tomography of the head did not show foci with increased accumulation of the contrast medium. The extrabulbar spaces were symmetrical, preserved bilaterally, the eye-balls being well proportioned. In the projection of the orbit the presence of pathological tissue was not distinct.

Despite pharmacological treatment, an increased intrabulbar pressure was maintained. Her sight acuity underwent exacerbation. Also, symptoms of eye-ball inflammation intensified. On the basis of clinical symptoms and anamnesis, metastatic carcinoma of the iris and choroid in the left eye was diagnosed. The left bulb was enucleated. No postoperative complications were observed.

The macroscopic anatomo-pathological examination of the internal surface of the eye-globe showed a slight thickening of the posterior part of the choroid. In a histopathological examination sections taken from these places as well as those from the suspected areas of the iris, showed fine focused and scattered infiltrations of the globe wall, mainly of the choroid and iris, by cancer cells similar to those of the breast carcinoma operated two years earlier (Fig. 2). Histopathologically: *carcinoma microcellulare metastaticum choroideae et iridis (ex mamma)* was diagnosed (histopath. exam. no. ZAP—787271 — Doc. dr. hab. med. F. Woźniak (Fig. 2).

In patients with metastatic carcinoma of the mamma, almost always the primary focus is diagnosed first, and then later the secondary one in the eye globe. Ocular symptoms usually occur after several years, on average after 36

months (2, 12, 14). Metastases occur more frequently in the left eye (2). From extensive statistical reports published in recent years it appears that metastases are located in the choroid, iris, ciliary body and retina. Metastatic carcinomas of the mamma have a distinct tendency to multifocally spread to the choroid (2, 12).

In differentiation of metastatic carcinomas in the eye-ball angiomas, inflammation of the vascular membrane accompanied by detachment of the retina and other forms of retinal inflammations should be taken into consideration (12). Metastatic carcinomas have some clinical features which may suggest a correct diagnosis. The colour of a metastatic changes is usually yellowish-white. Brown spots consisting of accumulated macrophages are visible on the surface. Metastases to the iris are yellowish-pink and do not contain a stain (12, 14). Sometimes strongly marked inflammatory symptoms may occur in the vascular membrane.

The description of the ocular changes found in the patient presented, points to the occurrence of carcinoma metastases to the eye-ball, and occurrence of the primary focus in the mamma. The time which had elapsed from the detection of the breast cancer till the appearance of changes, involvement of the left eye, the typical appearance of changes found by ophthalmological examinations which occur in the iris and choroid and intensifying symptoms of choroiditis should be mentioned here. The course of the disease allowed for its diagnosis on the basis of the occurring clinical symptoms. The left eye-ball was enucleated. The patient is being followed up constantly. So far no metastases to the other regions of her body have been found.

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STRESZCZENIE

Omówiono poglądy i dane na temat przerzutów nowotworów złośliwych do gałki ocznej, a następnie przedstawiono szczegółowo własny rzadki przypadek izolowanego przerzutu raka sutka do gałki ocznej u 67-letniej kobiety.

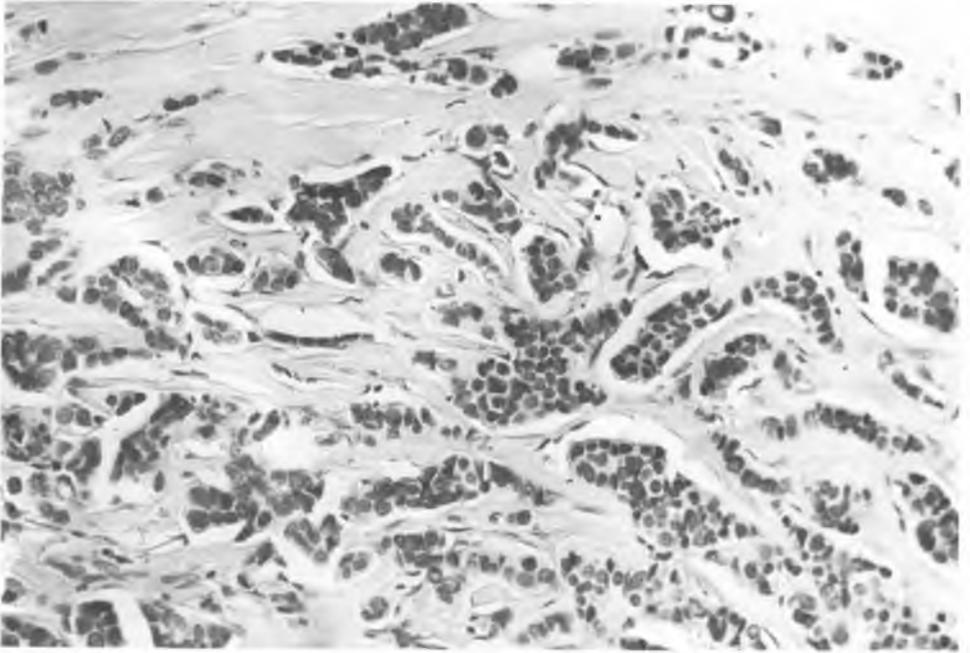


Fig. 1. Segment of mamma cancer: scattered and fine-focused infiltration of cancer cells; marked extensive desmoplasia. Hematoxylin and eosin. Magn. 120 ×

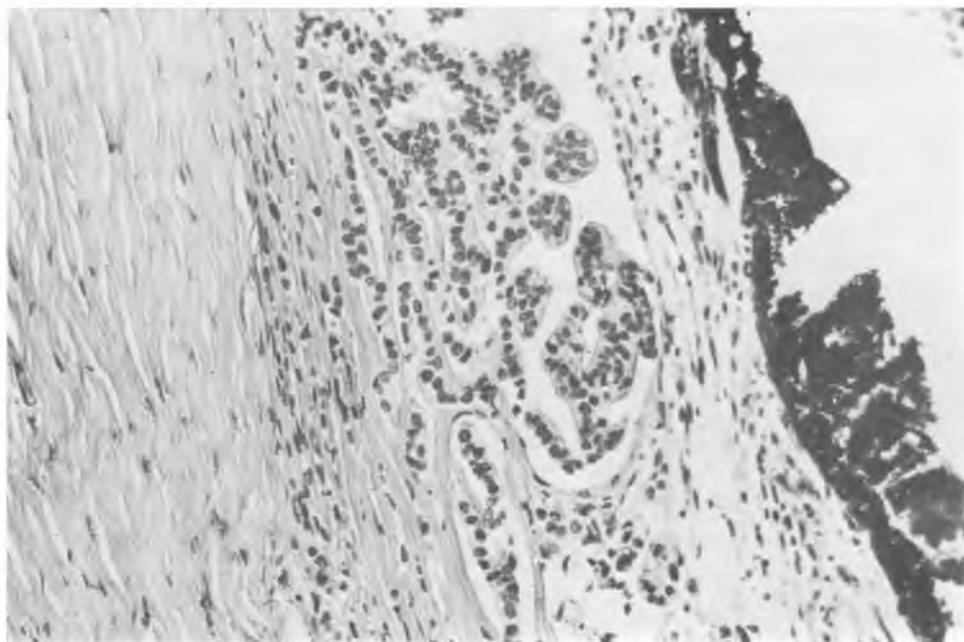


Fig. 2. Cross-section of the posterior part of the eye-ball; fine focused and scattered infiltration of the choroid of the same cancer cells as in Fig. 1. Hematoxylin and eosin. Magn. 100 × .