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Case report / Приказ болесника

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Tumors of the orbit as a first manifestation of a lung and breast malignancy

Тумори орбите као прва манифестација малигне болести плућа и дојке

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SUMMARY

Introduction Orbit is one of the rarer locations for the metastasis of malignant tumors. The symptoms of orbital tumors are nonspecific, but require a detail diagnostic. Methods of visualization, such as ultrasound, radiography, computed tomography scan and/or magnetic resonance imaging of the endocranium are a mandatory step in the diagnostic in order to determine, not only the spread of the malignancy, but to determine the affliction of the surrounding structures. The orbital manifestations can be the first sign of the malignant disease.

Case outline First case report presents a female patient with ocular symptomatology as a result of a metastasis of previously undiscovered breast cancer, and the second report introduces a male with undiscovered lung cancer also presenting with ocular symptomatology.

Conclusion Orbital tumors should instigate further diagnostic procedures, as it can be the first sign of a disseminated malignant disease.

Keywords: orbit; cancer; metastasis; lungs; breast

САЖЕТАК

Увод Орбита представља једну од ретких локацију метастаза малигних тумора. Симптоми тумора орбите су неспецифични, али захтевају детаљну дијагностику. Методе визуализације као што су ултразвук, радиографија лобање и компјутеризована томографија/магнетна резонантна томографија ендокранијума представљају обавезан корак у дијагностици како би се тачно одредио степен раширености метастазе, као и захваћеност околних структура. Треба напоменути да симптоматологија везана за метастатски тумор орбите може бити први знак малигне болести.

Приказ болесника Први приказ случаја се тиче жене са орбиталном симптоматологијом која је последица метастазе претходно неоткривеног карцинома дојке, док се у другом случају радни о мушкарцу са орбиталним манифестацијама метастатског карцинома плућа, такође претходно недијагностикованог.

Закључак Малигни тумори орбите треба да подстакну даљу дијагностику код оболелог, с обзиром да могу бити последица дисеминоване малигне болести.

Кључне речи: орбита; карцином; метастаза; плућа; дојка

INTRODUCTION

Tumor of the orbit is a term that encompasses a wide array of both benign and malignant processes located in the orbit or in its structures (mainly bone structures). Some of these processes are vascular malformations, inflammations, proliferation of the adipose tissue (in Graves-Basedow disease), benign and malignant tumors. The clinical manifestation of the orbital tumors is, most commonly, nonspecific, and is manifested with exophthalmos, ptosis, ocular pain, or visual disorders. Computers tomography (CT), magnetic resonance imaging (MRI) and ultrasound are important visualization methods in the diagnostic of these tumors, as well as providing important data in choosing the best treatment options [1]. Depending of the etiology and clinical presentation, the treatment options of the orbital tumors are pharmacological, surgical, or radiational [2, 3]. We present two clinical cases where the

primary manifestation of a malignant disease, whose primary localization is extraorbiral, is orbital symptomatology.

FIRST CASE REPORT

Female patient, aged 54 years, was initially treated in the Clinic of Ocular Disease, Clinical Center of Serbia, due to double vision, ocular pain and suddenly developed divergent strabismus. Retrobulbar mass was discovered and a biopsy was performed. The pathohistological finding was that of a metastatic adenocarcinoma. As a part of a preoperative diagnostic, a chest X ray was performed and showed a bilateral pleural effusion. Pulmonologist was consulted, who indicated the hospitalization on the Clinic of Pulmonology. After hospitalized, a diagnostic pleural thoracentesis was performed and its pathohistological finding was that of a chronic fibrosing pleuritis. In the effusion itself, malignant cells were discovered; however, further differentiation could not be performed. During the physical examination, enlarged lymph nodes in the both of the axilla were found, so a mammography was performed. The mammography has shown a malignant lesion in the left lesion, classified as T2N1Mx. In order to determine the spread of the malignant disease, radiography of the head, spine, and pelvis was performed, which had shown multiple osteolytic metastasis (Figure 1). After performing all of the previously stated diagnostic procedures, as well as the revision of the orbital tumor biopsy, it was concluded that the patient has a primary breast cancer with the metastasis in the orbit, pleura, and the skeletal system. The patient was presented to the Council for primary breast cancer on the Institute for Oncology and Radiology of Serbia. The Council suggested the treatment with systemic chemotherapy, FAC regime.

SECOND CASE REPORT

Male patient, 47 years old, was admitted to the Clinic of Ocular Disease, presenting with a ptosis of the right eyelid. He did not have any respiratory symptoms at the time of admission. As a part of the diagnostic, a CT scan of the endocranium was performed (Figure 2) which showed that the ptosis is caused by a tumor of the orbit. Additional diagnostic procedures were performed, chest X ray showed an enlargement of the right hilum with an elements of infiltration present. This finding was further expanded with a CT scan of the thorax and abdomen (Figure 3) which showed a primary tumor mass in the right lung with multiple osteolytic metastasis in the thoracic vertebrae, left iliac bone and in the skull. Multiple osteolytic metastasis had been confirmed with a scintigraphy (Figure 4), and new metastasis in the sternum and ribs had been detected. The patient was transferred to the Clinic of Pulmonology. Taking into consideration the state of the patient (severe cachexia, cyanosis) and a severe decrease in pulmonary function, predominantly obstructive type (FVC 44.2%, FEV1 21.4%, FEV1/FVC 38.85), further diagnostic procedures were not performed in that time, and the symptomatic treatment was applied. Despite all of the therapeutic measurements, the patient suffered a lethal outcome.

DISCUSSION

Although rare, the signs and symptoms of the metastasis in the ocular region can be the first sign of a malignant disease [4]. As for the metastasis of the non-small cell lung cancer, the eye represents an uncommon localization [5]. The clinical symptoms evolve rather quickly, in a matter of weeks or months, and consist of exophthalmos and difficulty moving the eye itself. Pain, double vision and other visual problems are also frequent. It should be noted that, depending on the destruction of other nearby structures, patient could manifest with an enophthalmos. Certain studies have shown a relative correlation between the

localization of the metastasis in the orbit and its primary localization. Breast cancer has an affinity for the adipose and muscular tissue, prostate cancer afflicts the bone, and melanoma most commonly afflicts the muscular tissue [6]. Ocular manifestations can be the first symptoms of a malignant disease primary located elsewhere. The incidence of ocular metastasis in lung cancer is between 4% and 6.7% [7]. A case report in the University hospital in Bohn has shown a patient, aged 65 years, who presented with an afferent pupillary defect in his vision. Initial diagnosis was that of an acute optic ischemia. However, after further diagnostic, it was discovered that the metastasis of the lung cancer caused the compression of the optic nerve, which in turn caused the visual deficit [8]. A patient similar to our second case report, was described by the doctors in Japan. The patient, 55 years of age, had sudden onset of double vision with no respiratory symptomatology. The initial MRI of the endocranium had shown a tumor in the right orbit with destruction of the surrounding bone structures. The finding was supplemented with a CT scan of the thorax, and the full body scintigraphy. The CT scan had shown a tumor in the right lung with a diameter of 4 cm. Pathohistological finding had shown that the tumor is an adenocarcinoma, and the scintigraphy had shown multiple osteolytic metastasis. Taking into consideration all of the diagnostic results, it was concluded that the patient had adenocarcinoma of the lungs with multiple metastasis. The patient was treated with chemo- and radiotherapy, however, three months after the diagnosis was set, despite the therapy, the patient died [9]. A case report form Indonesia had showcased a 39-year old woman who presented with blindness and nonproductive cough. The physicians performed a panel of similar diagnostic procedures as us, and were able to perform a biopsy of a supraclavicular lymph node which. The biopsy had shown that the patient had adenocarcinoma of the lung. After multidisciplinary approach, it was concluded that the patient had stage IV lung cancer, and was treated with chemotherapy. Unfortunately, after the first cycle, patient passed away [10].

The orbit is not so common localization of the metastasis for malignant tumors [11]. More often than not, the ocular symptomatology is the first sign of the malignancy. The methods of visualization, such as CT scan, MRI and the full body scintigraphy, are important to diagnose the underlying disease, as well as its spread. However, it is important to know that the lethality in these patients is significantly higher, due to the fact that these patients usually have multiple metastasis. Certain tumor markers have shown promise in predicting the development of ocular metastasis, although further research is needed [12]. The purpose of our case reports is to present these relatively rare forms of metastasis, and to help in everyday clinical practice in diagnostics of the primary malignant disease.

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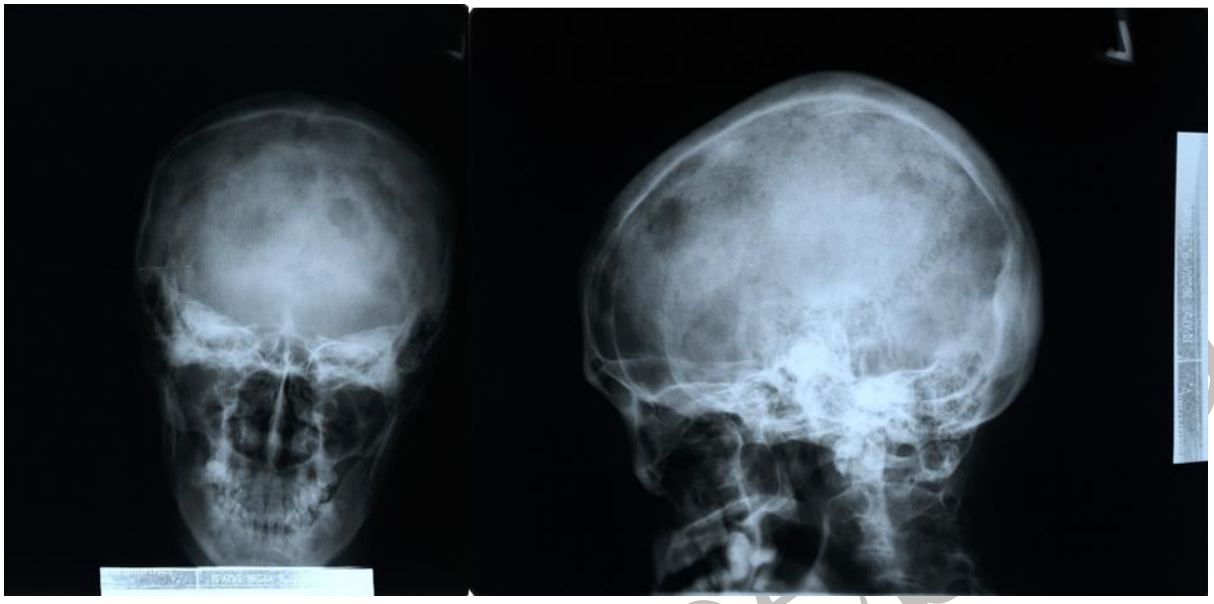

Figure 1. Radiography of the skull and spine with osteolytic metastasis

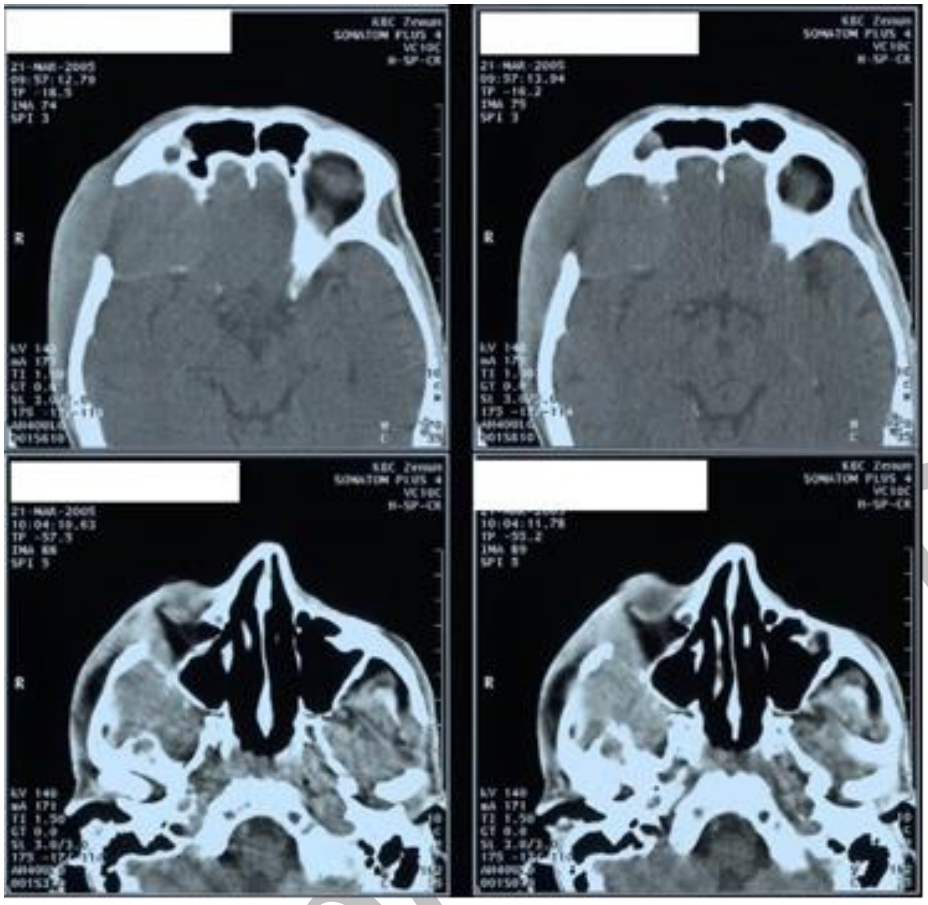

Figure 2. Computed tomography scan of the endocranium, showing tumor infiltrating the base of the skull, zygomatic bone, and the walls of the orbit, with the penetration in the endocranium

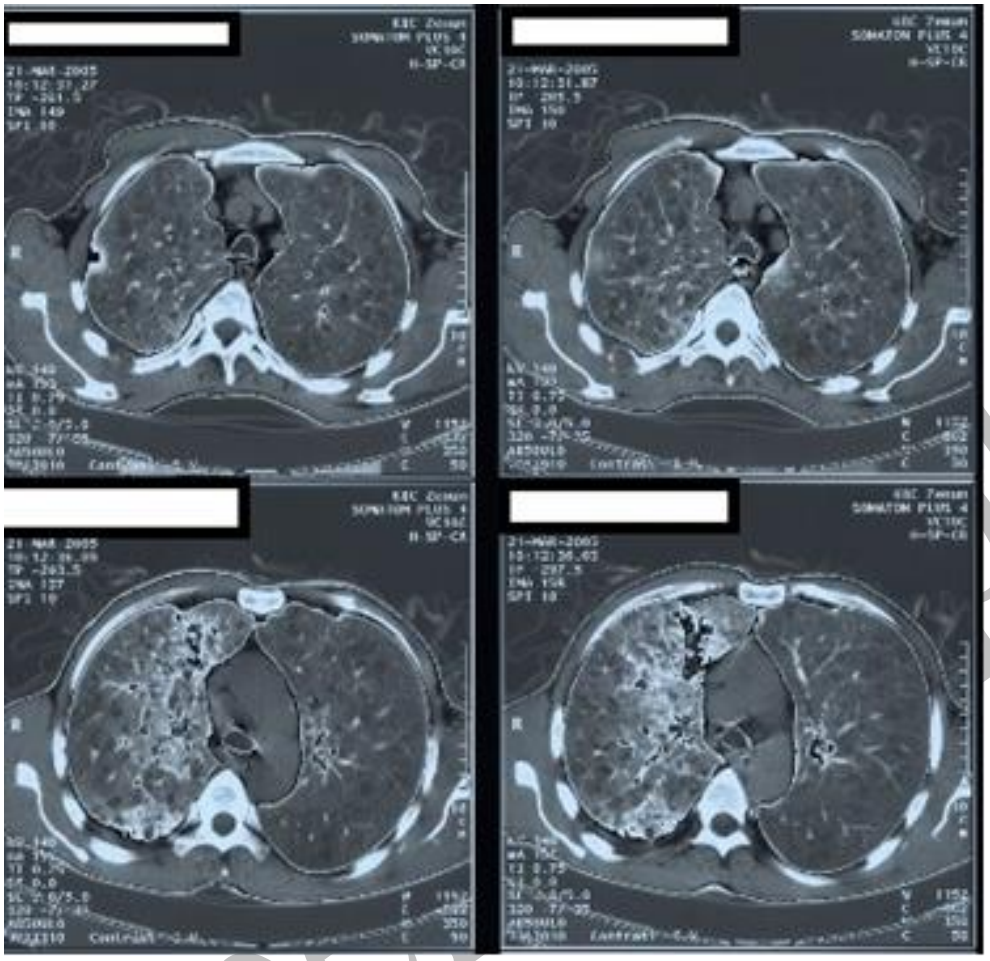

Figure 3. Computed tomography scan of the thorax, showing emphysema, tumor and multiple metastatic changes

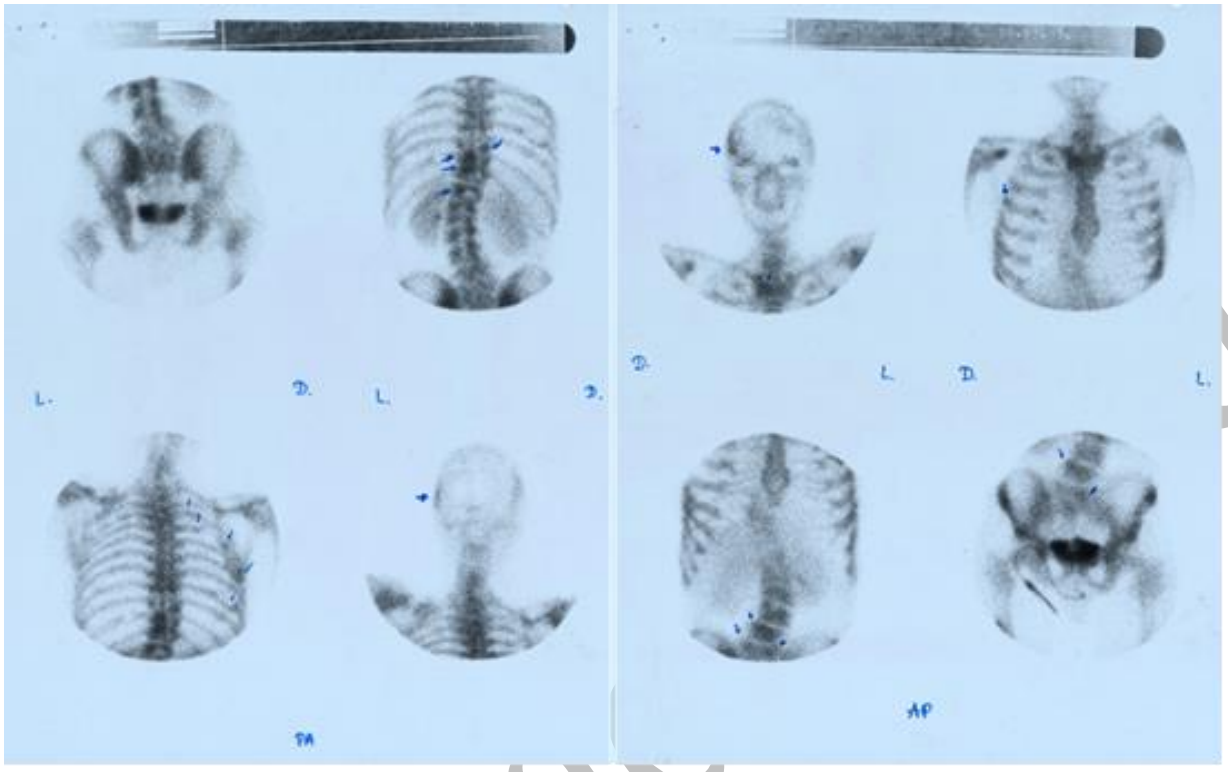

Figure 4. Scintigraphy with multiple osteoblastic changes in vertebrae, sternum, scapula, skull, and ribs

