A Case of Sinonasal Squamous Cell Carcinoma with Secondary Involvement of the Orbit

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ABSTRACT

We report clinical characteristic, imaging studies, and management of a rare case of expansion epithelial malignancy due to squamous cell carcinoma (SCC). A man was admitted with protrusion of the left eye due to orbital medial tumor mass. The patient had undergone removal surgery, chemotherapy, and radiotherapy two years ago. Imaging and histopathological studies were conducted to determine protrusion of the left eye due to Non-keratinizing sinonasal SCC. The left eye exenteration was conducted and continued with the chemotherapy procedure. This case demonstrates that even aggressive and repetitive surgical may not be adequate in preventing worse outcomes.

Keywords: Sinonasal Squamous cell carcinoma, Non-keratinizing, orbital tumor, Malignancy.

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I. INTRODUCTION

Eye tumors are rare and can arise from the orbital wall, orbital contents, paranasal sinuses, and surroundings. Eye tumors can be a major cause of loss of visual acuity compared to other eye diseases and cause cosmetic defects and death [1], [2]. Squamous cell carcinoma (SCC) accounts for approximately 60% to 75% of sinonasal malignancies. However, sinonasal squamous cell carcinoma (SCC) is rare overall. Sinonasal SCC presents with nonspecific symptoms such as nasal congestion, rhinorrhea, headache, and sinus pressure, or can be asymptomatic altogether in the early stage [3], [4]. Because of this, the majority of these tumors present at an advanced stage [5], [6]. The advanced presentation of Sinonasal SCC, coupled with its proximity to the skull base and vital organs, often limits the extent of safe surgical extirpation and high-dose radiotherapy.

The prognosis for patients with Sinonasal SCC is generally poor, with 5-year survival rates of 54% to 60% [6]. In Indonesia, data on eye tumors is still very little, so the need for new data about this eye tumor.

II. CASE DESCRIPTION

A 49-year-old man with a history of the nasal tumor was admitted with protrusion of the left eye due to orbital medial tumor mass following an 8-month history of bulging and pain in the left eye. The patient also had blindness in the left eye. On examination, the patient was having breathing difficulty. The patient had undergone surgery for removing the tumor and had done chemotherapy and radiotherapy two years ago. The patient's visual acuity was >2/60 on the right

eye and no light perception on the left eye. A medial orbital mass was found on the left eye pressing the eyeball to the lateral side. Moreover, a mass expansion was found on the sinus and inferior orbital. A fundoscopic examination on the left eye was difficult to be conducted. There was a mass in the medial orbital of the left eye pushing the eyeball laterally with an extension of the mass to the sinonasal and inferior orbit. Fundoscopic examination of the right eye under normal conditions, the left eye is difficult to evaluate. ENT examination shows a mass in the sinuses (Fig. 1).

Fig. 1. Initial presentation.

Imaging and histopathological studies were performed on the left eye as a role in determining the assessment of protruded of left eye due to Orbital Medial Tumor Mass due to Non-keratinizing Sinonasal SCC with expansion to orbit. The results of the histopathological examination were obtained the tissue fragments containing tumor mass consist of a proliferation of neoplastic squamous epithelial cells to form solid islets of partly basaloid, infiltrative papillary between the connective tissue stroma. The morphology of these cells was eosinophilic cytoplasm, oval round nucleus, increased N/C ratio, moderate core pleomorphic, hyperchromatic partially vesicular with prominent children.

Mitosis 13/10 TBSA. There are areas of necrosis and bleeding with the conclusion Non-Keratinizing Squamous Cell Carcinoma, poorly differentiated.

Magnetic resonance imaging (MRI) axial slice head T1TSE, T2TSE, T2Flair, GRE, coronal T2TSE, Sagittal T1TSE, DWI without and with media contrast impression: Sinonasal solid mass increases the contrast size of 4.6×6.7×8 cm in the left maxillary sinus, ethmoid sinus, right and left sphenoid sinus, extending into the left orbital cavity attached to the left medial rectus musculus pushing the ocular bulb anterolaterally, and extending to the lobe. right and left frontalis with perifocal edema with a malignant impression (Fig. 2)

Fig. 2. Head MRI.

The left eye exenteration and tumor mass removal were conducted through surgery by an ophthalmologist, otorhinolaryngologist, and neurosurgeon. After the surgery was conducted, it was continued by the chemotherapy procedure to correct the condition. The patient's condition after 1.5 months of the review was reported: his left eye was swollen and bleeding. A solid, hump-like, hyperpigmented, actively bleeding, and pain mass sized 10cmx8cm was found (Fig. 3).

Fig. 3. Follow up presentation.

After 2 months of review, the mass was still solid, hump-like, hyperpigmented, and painful. Moreover, the necrotic tissue and maggots were found (Fig. 4).

Fig. 4. Follow up presentation.

III. DISCUSSION

The patient was diagnosed with protruded of left eye due to Orbital Medial Tumor Mass due to Non-keratinizing sinonasal. Orbital tumors are heterogeneous lesions originating from various structures in the orbit. Orbital tumors are divided based on the location of origin and histology. Based on the location of origin, the orbital tumor is divided into primary lesions, which originate in the orbit, secondary lesions are extensions to the orbit of other nearby structures, for example, intracranial tumors and paranasal sinus tumors; tumor metastases [3], [4], [6]. Based on the histology, orbital tumors are divided into epithelial tumors, mesenchymal tumors, sarcoma, lymphangioma, and meningioma, lymphatic and hematogenous tumors [8].

Squamous cell carcinoma is also slow-growing and painless, treated as a hyperkeratotic nodule, which can become ulcerated [6]. The main symptom that appears is proptosis due to the effect of an enlarged tumor mass. Proptosis is an abnormal increase in the value of the protrusion of the eyeball. Changes in vision and visual fields, diplopia, impaired extraocular muscle movement, or abnormalities in the pupil can result from invasive or intraorbital compression of the solid tumor.

Imaging studies can help to diagnose orbital neoplasms. Histological analysis is needed as a guide for making a differential diagnosis. Descriptions of precise location, orbital compartment interactions, spread to the orbital apex or along the perineural and intracranial abnormalities provide what information is visible on fundoscopy and facilitate recovery of therapy [9], [10].

Exenteration of the left eye was performed. The choice of surgical therapy for orbital tumors is based on the location, size, demarcation, and histological type of the lesion. This therapy was chosen because it caused the least amount of trauma [10].

IV. CONCLUSION

This case demonstrates that even aggressive and repetitive surgical may not be adequate in preventing worse outcome. Additional studies are needed to further improve our

understanding of the similarities and differences among the various SCCs, toward improvements in diagnosis, prognosis and therapy.

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