INTRODUCTION
Optic nerve metastasis is a rare entity with reported incidence varying from 1.3% to 3% and is associated with dismal prognosis.1 The most common malignancies those have been reported to metastasize to the optic nerve or its sheath are breast, lung, kidney, bladder, gastric and colorectal cancers.2 Isolated optic nerve metastasis in carcinoma of uterine cervix is extremely uncommon manifestation and only one case of carcinoma of cervix metastasizing to optic nerve/optic nerve sheath has been reported so far.3 Here-in, we describe a case of metastatic squamous cell carcinoma of cervix to the optic nerve.

CASE REPORT
A 61-year Saudi woman sought treatment after progressive loss of vision and pain in her right eye for 3 months. Past history revealed that she had undergone pelvic concurrent chemoradiation 6 months back for squamous cell carcinoma of cervix stage FIGO IVA. General physical and abdominopelvic examination was unremarkable. Fundoscopic evaluation revealed pallor of the right optic disc a cup-to-disc ratio of 0.2 on the right, mild hyperplasia of the retina with no impairment of ocular movement. Gadolinium enhanced Magnetic Resonance Imaging (MRI) of brain demonstrated prominent solid mass of the intraorbital optic nerve extending to the orbital apex and the right cavernous sinus. Histopathology of optic nerve lesion, (A) Hematoxylin and eosin x 100 showing squamous cells, (B) Immunopositivity for p16 and (C) CK5/6.

Optic Nerve Metastasis from Squamous Cell Carcinoma of the Uterine Cervix
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ABSTRACT
Metastatic involvement of the optic nerve or its sheath is very rare (1.3 - 3%). The most common malignancies reported to metastasize to the optic nerve or its sheath are breast, lung, kidney, bladder, gastric and colorectal cancers. Carcinoma of uterine cervix metastatic to optic nerve and optic nerve sheath is extremely rare and is associated with grave prognosis due to underlying high tumor burden. Here in, we report a 61-year Saudi woman who was treated with concurrent chemoradiation for squamous cell carcinoma of cervix FIGO IVA 6 months back. She presented with pain and progressive visual loss in the right eye. Magnetic resonance imaging showed enhanced solid mass of the intraorbital optic nerve consistent with optic nerve sheath meningioma. Immunostaining (CK5/6, CAM 5.2, p63 and p16) confirmed the diagnosis of metastatic squamous cell carcinoma of uterine cervix.

Key Words: Carcinoma of cervix. Optic nerve. Optic nerve sheath. Metastasis.
the patient with close follow-up and repeat imaging. Approximately 3 months later, repeat MRI showed an interval progression of lesion.

After discussing the case in multidisciplinary board meeting, the patient underwent resection. A right-sided supraorbital approach was used to access the optic nerve. Perioperative findings of lesion appeared to be characteristic of metastatic deposit as the tumor was directly invading the optic nerve. Immunohistochemistry (IHC) revealed the immunopositivity for CK5/6, CAM 5.2, p63, p16 and immunonegativity for CK7, CK20, monoclonal CEA and CA-125 favoring the diagnosis of metastatic squamous cell carcinoma of uterine cervix (Figure 2). Cerebrospinal Fluid (CSF) analysis was negative for any malignant cells.

Postoperatively, palliative radiation therapy (3000cGy in 10 fractions) was given to right optic nerve residual mass followed by systemic single agent chemotherapy (gemcitabine 800 mg/m² on Days 1, 8 and 15). At the time of reporting this case, she is on follow-up with medical oncology.

DISCUSSION

Cervical cancer ranks as the 11th most frequent cancer among women in Saudi Arabia, and the 8th most frequent cancer among women in the age group of 15 to 44 years. Common homing sites for cervical cancer are lymph nodes, lungs and bones. Isolated optic nerve or optic nerve sheath metastases from squamous cell carcinoma of the uterine cervix are extremely rare. The exact pathogenesis is not known, but possible routes for these metastases to get access to the dura and optic nerve include perineural, perivascular and hematogenous spread, CSF seedings or through direct invasion from bony deposits.5

Radiologically, optic nerve/sheath metastasis appear like meningioma. The contrast enhanced CT scan possibly can differentiate optic nerve or optic nerve sheath metastases from meningioma due to characteristic intense and linear pattern of enhancement in optic nerve or optic nerve sheath metastases. However, gadolinium enhanced MRI has been found superior to contrast enhanced CT scan in cases when most of the enhancement lies against the skull vault as seen in this patient. Histopathological diagnosis is confirmatory; especially the use of IHC (CK5/6, CAM 5.2, p63, p16, and CEA) is of great value in distinguishing the primary site of the tumor as indicated in this patient.6 The optimal treatment for optic nerve or optic nerve sheath metastases depends can be (a) observation in patients with mild or no visual deficit, (b) stereotactic radiation therapy in advanced cases and (c) excision of lesion is primarily reserved for the patients with complete vision loss.7

In conclusion, isolated optic nerve or optic nerve sheath metastases secondary to squamous cell carcinoma of uterine cervix are extremely rare. Contrast enhanced CT scan or MRI are helpful to differentiate from optic nerve sheath meningiomas, however, histopathology especially IHC is confirmatory to establish diagnosis for prompt treatment.

REFERENCES