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CRANIAL ACTINOMYCOSIS AND SEPTIC CEREBRAL VENOUS THROMBOSIS

Neurology

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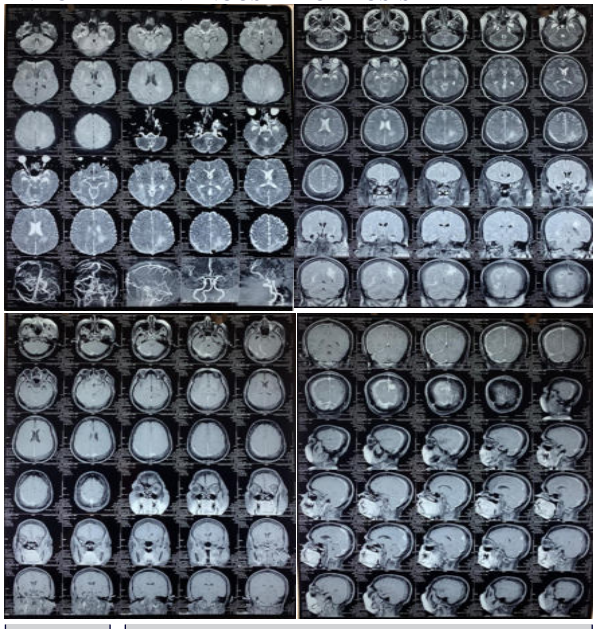
KEYWORDS

CASE SUMMARY

60 years old female diagnosed to be having CNS actinomycosis 3 years back presented with neurovisual loss for which she was treated with penicillin. Her vision improved and she was discharged. Now she presented with severe headache in the occipital region of 3 months duration. On general examination she was conscious and alert. On CNS examination she had bilateral papilloedema with secondary optic atrophy. Her motor, sensory and cerebellar functions were normal.

Her neuroimaging (MRI BRAIN Plain and contrast) showed widened diploid spaces with calvarial thickening and sclerosis noted in bilateral parietooccipital lobe. There was significant dural thickening with enhancing nodular lesion in bilateral parietooccipital lobe, the largest nodule measuring 1.5x 1cm in left parasagittal parietal lobe. There is enhancing soft tissue in right occipital lobe communicating with dura through right lambdoid. T2/FLAIR Hyperintensity noted in bilateral parietal lobe and right occipital lobe with no diffusion restriction suggestive of edema. Minimal right parieto occipital subdural collection of size 0.3cm noted with no diffusion restriction. Right mastoid air cells show T2/FLAIR hyperintensity with mild enhancement on post contrast study suggestive of right mastoiditis. Mildly prominent bilateral perioptic space. The sella is empty. Reduced mamillopontine distance with effacement of prepontine cistern. Crowding of posterior fossa with defaced cerebellar folia. Cerebellar tonsillar germination of 1.3 cm below McRae's line. These features suggest intracranial hypertension. MR angiogram was normal. MR venogram showed non visualisation of posterior 3rd of superior sagittal sinus, right transverse ,sigmoid sinus, right internal jugular vein with multiple collaterals. Neuroimaging features suggestive of cranial actinomycosis with septic cerebral venous thrombosis.

MAGNETIC RESONANCE IMAGING : ACTINOMYCOSIS AND CEREBRAL VENOUS THROMBOSIS



DISCUSSION

Actinomycosis is a rare infectious bacterial disease caused by genus *Actinomyces*. These bacteria are generally anaerobes. Affected human often has recent dental work, poor oral hygiene, periodontal disease, radiation therapy or trauma causing local damage to tissue mucosa.

The disease is characterized by formation abscess in mouth, lungs, gastrointestinal tract, rarely in cranial vault. Actinomycosis abscess grow larger as the disease progresses, often over months. In severe cases, they may penetrate the surrounding bone and muscle to the skin, where they break open and leak large amounts of pus, which often contains characteristic granules (sulphur granules) filled with progeny bacteria. These granules are named due to their appearance, but not actually composed of sulphur. (1)

Cranial actinomycosis has been reported to present as brain abscess, subdural abscess and osteomyelitis of cranial vault.(2) Papilloedema is optic disc swelling caused by increased intracranial pressure due to any cause. Swelling is usually bilateral, can occur in hours to weeks. In early stages papilledema can be asymptomatic or present with headache. It can progress to enlargement of blind spot, blurring of vision, visual obscurations. Ultimately total loss of the vision secondary to optic atrophy can occur.(4)

Optic atrophy refers to death of the retinal ganglion cells axons that compromise the optic nerve with the resulting picture of pale optic nerve on fundoscopy.(3)

Cerebral venous sinus thrombosis is the presence of blood clot in dural venous sinuses. Symptoms include severe headache, visual symptoms and symptoms of stroke and seizures. Diagnosis is usually by magnetic resonance imaging of brain and dural venous system and cerebral veins. (5)

This patient clinically presented with intense headache with past history of cranial actinomycosis. Fundus examination revealed features of papilledema and secondary optic atrophy. Magnetic resonance imaging of brain and venous system revealed features suggestive thrombosis of superior sagittal sinus, right transverse ,sigmoid sinus, right internal jugular vein in favour of septic cerebral venous thrombosis associated with actinomycosis.(6) Patient was treated with penicillin, low molecular weight heparin, Mannitol and supportive treatment. Patient improved well and was discharged.

CONCLUSION

Cranial actinomycosis with septic cerebral venous thrombosis has not been reported. Early diagnosis and therapeutic intervention is needed to avoid poor outcome.

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