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DOI: 10.2478/rjr-2020-0021

Romanian Journal of Rhinology, Volume 10, No. 39, July - September 2020

CASE REPORT

Unilateral frontal sinusitis with bilateral frontal lobe abscess

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ABSTRACT

BACKGROUND. Complications of rhinosinusitis are rare due to the widespread use of antibiotics. The complications are most commonly seen in young adults due to the presence of highly vascular diploic veins and are relatively infrequent in the elderly population.

CASE REPORT. We present a case of a 70-year-old male admitted to ENT Outpatient Department with chief complain of fever, headache, blurring of vision. The cranio-cerebral MRI revealed fluid collection in the left frontal sinus and in the bilateral frontal lobes. A diagnosis of frontal sinusitis and bilateral frontal lobe abscess was established. We performed endoscopical surgical drainage of the frontal sinus, with pus evacuation and we administered broad-spectrum antibiotic and systemic corticosteroids therapy for 14 days.

CONCLUSION. Rhinosinusitis with intracranial complication in elderly people is scarce to find because of less chance of sinus and middle ear infection and also because of less vascular diploic veins. Also, there may be no history or previous symptoms of sinusitis. A high index of suspicion with early surgical and medical intervention are utmost important in the management of these patients.

KEYWORDS: sinusitis, frontal lobe, abscess.

INTRODUCTION

Intracranial complications of rhinosinusitis are rare nowadays because of easy access to antibiotics which, administered in early phases, significantly improve the prognosis of this disease. Any part of the brain can be affected as a complication of rhinosinusitis. Around 34% of brain abscesses which occur in the community are represented by complications of sinusitis[1]. The frontal lobe is one of the common sites involved. The majority of brain abscesses arise by direct spread from the paranasal sinuses, middle ear and mastoid areas[2].

Most brain abscesses occur in the first two decades of life because of the predisposition of this age group to sinus and middle ear infections. Approximately 3.7 to 11% hospitalized sinusitis patients develop intracranial complications[3].

Early diagnosis and treatment are essential, as these infections have a life-threatening potential, with neurologic and ocular disability.

We present the case of an elderly male patient who developed bilateral frontal lobe abscess secondary to unilateral frontal sinusitis. This association is a rare finding in the literature.

CASE REPORT

A 70-year-old male patient was brought to the ENT Outpatient Department with swelling of the left eye, blurring of vision, headache, fever and facial pain. On examination, the patient was fully conscious, oriented and co-operative. During the clinical exam, we observed ptosis of the left eye, fullness in the left frontal sinus area, restriction of

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Received for publication: May 5, 2020 / **Accepted:** June 11, 2020

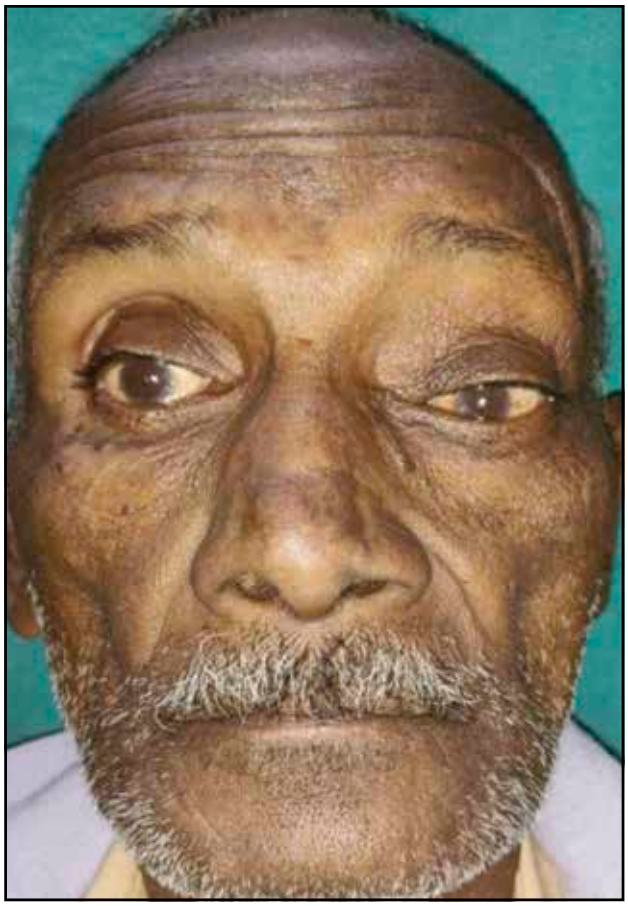

Figure 1. Patient with ptosis of the left eye and restriction of eye movement.

Figure 2. Brain and orbit MRI: left frontal sinusitis and bilateral frontal lobe abscess with displacement of the left eyeball.

the left eye movement and the inability to elevate the left upper eyelid (Figure 1). All higher functions (intellectual, language and speech, memory) and cranial nerve examinations were normal.

The nasal endoscopy revealed minimal secretions in the left middle meatus. The patient was admitted in our department, and he underwent a detailed evaluation. All the blood parameters were within normal limits. The electrocardiogram was suggestive of ventricular premature complexes. Magnetic resonance imaging (MRI) of the brain and orbit revealed mucosal thickening and fluid collection in the left frontal sinus, bilateral frontal lobe oedema with parenchymal liquefaction and compression of the left eye antero-inferiorly (Figure 2 and Figure 3).

We decided to perform endoscopic frontal sinus surgery under general anaesthesia, with the drainage of the pus from the left frontal sinus and the frontal lobes.

The patient was put on systemic antibiotics and corticosteroids for two weeks. He was asymptomatic at the time of discharge and there was significant improvement in his ocular function also.

Figure 2. Brain and orbit MRI: left frontal sinusitis and left frontal lobe abscess.

DISCUSSIONS

Sinusitis complications are rare nowadays due to the widespread use of antibiotics. Intracranial complications of sinusitis include meningitis, encephalitis, sinus thrombophlebitis and brain abscesses. The pathogen agents from the sinuses enter the brain via two routes: by direct extension and, more commonly, by retrograde thrombophlebitis via the valveless diploic veins. Retrograde thrombophlebitis is also accelerated by the shared venous drainage of the sinuses and the intracranial structures[4].

Subdural empyema with epidural abscess most commonly involves the frontal lobe secondary to the direct spread from the frontal sinus as a result of osteomyelitis of the posterior table. The clinical feature of complicated sinusitis may be acute, as in case of meningitis and cavernous sinus th rombosis, but it is relatively indolent in case of brain abscesses. Most commonly, complications of sinusitis occur in the second or third decades of life because of a highly vascular diploic venous system and because of continuous development of the frontal sinus in this age group. It is very rare to see a complication of sinusitis in the elderly, as in our case who was a 70-year-old man. Fever and headache are the most common presentation of complication. The most interesting feature is that there may not be a symptom or history of sinusitis[5].

CT scan is the common technique in diagnosing rhinosinusitis, but MRI is preferred when a parenchymal lesion is suspected. Lumbar puncture is usually contraindicated as it may lead to brain herniation in case of a patient with subdural empyema[6].

The management includes prompt surgical intervention with intravenous antibiotics for a minimum of 2 weeks.

CONCLUSIONS

Although complications of sinusitis are very uncommon in elderly individuals, a high index of suspicion in case of a patient presenting with fever, headache may be lifesaving. Early intervention with surgical drainage and antimicrobials is the cornerstone of management of such patients.

Conflict of interest: The authors declare that there is no conflict of interest.

Contribution of authors: All authors have equally contributed to this work.

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