OPEN ACCESS
Saudi Journal of Medical and Pharmaceutical Sciences
Abbreviated Key Title: Saudi J Med Pharm Sci
ISSN 2413-4929 (Print) |ISSN 2413-4910 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: http://scholarsmepub.com/sjmps/

Review Article

Pituitary Macroadenoma (Fungal Hyphae): A Case Report and Literature Review

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| **Received:** 14.04.2019 | **Accepted:** 23.04.2019 | **Published:** 30.04.2019
DOI:10.21276/sjmps.2019.5.4.9

Abstract

The aim to conduct this case study, because Pituitary Macroadenoma leading to aspergillus is a rare condition. In which the main pathogen of fungal sellar is aspergillus species. The pituitary infectious fungi consisted on different groups and dimorphic fungi. The leading pathogen of fungal sellar abscess is the type of aspergillus. The possible route of infection through sphenoid sinus with a thin sellar roof. Pituitary tumour differentiate through its size. Pituitary tumors undesirably known to grow in the, sphenoid bone, cavernous sinus, mid-nasal ductus, and left cerebral hemisphere. In our case presentation patient presented with pituitary macroadenoma, which diagnosed through magnetic resonance imaging. Presented with nasal mass, and acromegaly features, headache. Right eye vision loss. Through endoscopy biopsy report shows the nasal fungal infection. Surgical treatment, trans-sphenoidal procedure will be planned as recommended in literature reviews.

Keywords: Pituitary Macroadenoma, Nasal obstruction. Optic Chamise, Fungal Hyphae.

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INTRODUCTION

The etiologically of Intracranial vascular contamination because of fungal infection is extremely uncommon. Furthermost cases occur in immunocompromised patients with hostile fungal disease, most commonly originating in the paranasal sinuses [1]. Since the first case pituitary aspergillus reported by Simmonds in 1914. The infecting fungi can be grouped into molds, yeasts, and dimorphic fungi. The main pathogen of fungal sellar abscess is aspergillus classes. Aspergillus are universal fungi produce in soil and organic materials and can start saprophytic growth within the respiratory tract after inhalation [2].

The pathophysiologic pathway responsible for hypothalamic-pituitary dysfunction following acute meningitis is not fully unstated. In some patients, anti-pituitary and anti-hypothalamus antibodies are noticed. It is planned that acute infection aggravates an autoimmune process and may cause axonal injury with consequent neuroendocrine dysfunction (CNS infection) [3].

Initial identification and treatments are significant, and it is consequently significant to study the possibility of sellar aspergillosis even in patients without underlying risk factors. Grocott's methenamine-silver stain (GMS) positive for septated hyphae increases the possibility of an Aspergillus diagnosis, and PCR (Polymerase Chain Reaction) can be used as a confirmatory test. Discretely adapted treatment with oral voriconazole appears to be effective after surgical excision. The Sellar aspergillosis is an uncommon illness which is often originally misdiagnosed as an adenoma [4].

Pituitary aspergillosis is an extremely rare manifestation of invasive aspergillosis. A contrast MRI can often, but not always, help in suspecting this diagnosis. A trans-sphenoidal approach with debridement of the lesion is recommended. The optimum duration of therapy is unknown [5]. In this presenting case report, the patient was admittted with sphenoid sinus infection, inflammatory signs and sellar mass extension. Therefore, it is assumed that the pituitary fossa aspergillus infection was secondary to sphenoid sinus infection.

Case Presentation

A 36 years old female client was presented as out-patient department, with complaint of headache, blurred vision, nasal obstruction, amenorrhea, acromegaly features, and high blood glucose levels >300mg/dl. Her complaint duration was 9 months. She had been seeking health care from district hospitals for nasal obstruction, and headache. She was literate

(matriculation level). She had married since 7years, even no kids or history of conceived pregnancy. Amenorrhea had been started 2 years back. She was a housewife. She had a history of the surgical procedure of appendicectomy 10years back. In major medical problems history of diabetes Insipidus, Insulin dependent. Recent vital signs were recorded in normal ranges. No significant history of weight loss or gain. No history of food or drug allergy. She had no significant family history including (genetical, communicable and no-communicable diseases).

Physical examination has revealed typical acromegalic features in her face and extremities. Hard skin surface from palm of the hand soles. Right sided bulging eye. Cranial nerves intact. After clinical evaluation, to rule out the cause of acromegaly features which develops in a short period of time.

Her sleep rest pattern affected due to disease process and worried about changing of face features. After referral to the services, she started to be followed up regarding endocrinology (medical unit II), neurosurgery, ophthalmology, and ENT consultations. On physical examination, acromegaly was evident. BSL= 300→350→270→250→450mg/dl. Weight = 53kg.

Labs test	Normal values	Labs Values
Glucose (FASTING)	90-109	84mg/dl
Growth Hormone (GH)	2.0-5.0 ng/ml	107 ng/ml
Prolactin (PRL) ranging (III)	5.18 - 26.53	15.95ng/ml
TSH		0.388uIU/ml
T4 (serum)	5.5-11.0	4.7
ACTH		Normal
Cortisole		Normal

All routine blood labs values normal in range. Anti-nuclear factors: Negative. Magnetic resonance imaging (MRI) done (February 12, 2019) protocol plain- T1W1-12W1(axial, sagittal, and coronal) depicted a pituitary gland is enlarge measuring (21 x 22mm), appearing is on T1W1, hypo on T2W1. MRI suggested of bulky pituitary gland possibly of macroadenoma should be considered. MRI imaging re-reporting from Shaukat Khanum Memorial Cancer hospital, showing large pituitary mass suggest pituitary macroadenoma. Computerized Tomography of Para Nasal Sinuses shows Sino-nasal Polyposis. Endoscopic histopathology report showing the result of extensive infarcted tissue with non-septate branching fungal hyphae.

Mechanism of infectious, significantly is the sphenoid sinusitis can be due to infection of bacterial or fungal, and the possibility of invasive fungal sinusitis, especially in patients who are immunocompromised and present with acute complications of sinusitis. Visual symptoms, including vision loss due to hyper pituitary adenoma [6].

Medically treated with, Tab Metformin 500mg/TDS, Tab Itraconazole 100mg/BD, Tab Thyroxin 25mg/OD, Insulin "R" according to sliding scale, Hivit-spray 1puff/both nostrils/TDS, Tab Deltacortil 2+2, Tab Vorif 200mg, Cap Sporanox 100mg/BD. Treatment was ongoing and planned for Trans-sphenoidal surgical procedure.

DISCUSSION

Pituitary aspergillus is very extremely uncommon condition which occurs in almost exclusively in immunocompromised patients [7]. Pituitary aspergillus infection shows a variety of presentations and manifestations of symptoms when invading the sphenoid sinus and nasal cavity [8].

Endocrine disorders not involving the gonads, but strongly influence the reproductive functions [9]. The surgical procedure is suitable treatment for patients presenting with visual field deficits because it permits for immediate decompression of the optic chiasm. The adjuvant radiation may be more beneficial for patients to cure from further visual injury, or in cases where the tumor was 3 cm or larger [10]. The very effective treatment of fungal sellar abscess is endoscopic trans-sphenoidal surgery [7].

The optic chiasm is a key anatomical arrangement of erection along the visual pathway, situated at the intersection between the optic nerves and regions. A wide range of diseases can affect the optic chiasm and its adjacent deliberate region at the base of the brain [11].

It has been endeavor to highlight the importance of sound clinical evaluation and multidisciplinary cooperation (neurosurgery, otorhinolaryngology, ophthalmology, and endocrinology) in the diagnosis and (neurosurgery, otorhinolaryngology, anesthesiology, endocrinology, and radiation oncology) in the management of a rare clinical entity through this case report [12].

Uncertainty one is faced with an unusual sellar lesion, including hypo-intensity on T2WI, a peripheral contrast enhanced circumference, sphenoid sinusitis and

the possibility of aspergillus infection should be well-thought-out [13]. Early diagnosis and early inception of treatment in acromegalic patients can prevent the progression of cardiovascular illness and diminish the risk of unexpected death [14].

CONCLUSION

Endocrine disorders lead to disfunction of the reproductive functions. As a described in the literature reviews pituitary aspergillus is very rare condition which occurs in immunocompromised patients. Antifungal medication Voriconazol preffered after surgery, and surgical treatment suggested for those patients which presenting with visual field deficits because it allows for immediate decompression of the optic chiasm. Aspergillus sellar abscess must be considered in the differential diagnosis of a sellar mass, especially in the immune deficiency patients. Although the correct diagnosis of Aspergillus sellar abscess can only be determined by histopathological examination, MRI and CT remain the best techniques for pre-operative diagnosis. In this case presentation, treatment is on continue in the light of trans-sphenoidal surgical procedure.

REFERENCES

1. Monteiro, A., Agnoletto, G. J., Granja, M. F., Bit-Ivan, E. N., & Sauvageau, E. (2019). Basilar Occlusion and Rupture Secondary to Rare Fungal Sinusitis. *World neurosurgery*, *125*, 217-221.
2. Hong, W., Liu, Y., Chen, M., Lin, K., Liao, Z., & Huang, S. (2015). Secondary headache due to aspergillus sellar abscess simulating a pituitary neoplasm: case report and review of literature. *SpringerPlus*, *4*(1), 550.
3. Pekic, S., Miljic, D., & Popovic, V. (2018). Infections of the Hypothalamic-Pituitary Region. In *Endotext [Internet]*. MDText. com, Inc..
4. Al-Mendalawi, M. (2018). Pituitary aspergillosis: A report and review of the literature. *Neurology India*, *66*(5), 1525-1525.
5. Divyashree, S., Karthik, R., Prabhu, K., & Chacko, G. (2018). Pituitary aspergillosis-A report and review of the literature. *Neurology India*, *66*(4), 1176.
6. Meier, J. C., Scangas, G. A., Remenschneider, A. K., Sadow, P., Chambers, K., Dedmon, M., ... & Gray, S. T. (2016). Skull base erosion and associated complications in sphenoid sinus fungal balls. *Allergy & Rhinology*, *7*(4), ar-2016.
7. Lim, J. C., Rogers, T. W., King, J., & Gaillard, F. (2017). Successful treatment of pituitary sella Aspergillus abscess in a renal transplant recipient. *Journal of Clinical Neuroscience*, *45*, 138-140.
8. Singh, I., Sharma, S. A., Dutta, S. G. S., Kaur, G., & Phogat, D. (2018). A rare case of invasive pituitary tumor mimicking nasal mass. *Journal of Marine Medical Society*, *20*(2), 168.
9. Chang, A. Y., & Auchus, R. J. (2019). Endocrine disturbances affecting reproduction. In *Yen and Jaffe's Reproductive Endocrinology* (pp. 594-608). Content Repository Only!.
10. Nicholas, S. E., Salvatori, R., Quinones-Hinojosa, A., Redmond, K., Gallia, G., Lim, M., ... & Kleinberg, L. (2018). Deferred Radiotherapy After Debulking of Non-functioning Pituitary Macroadenomas: Clinical Outcomes. *Frontiers in oncology*, *8*.
11. Zaccagna, F., Pizzuti, V., Barone, D. G., Siotto, P., Saba, L., Raz, E., ... & Massoud, T. F. (2019). In and Around the Optic Chiasm: A Pictorial Review of Neuroimaging. *Neurographics*, *9*(1), 1-17.
12. Singh, D., & Sharma, R. R. (2018). Postharvest diseases of fruits and vegetables and their management. In *Postharvest Disinfection of Fruits and Vegetables* (pp. 1-52). Academic Press.
13. Li, H., Gong, X., Baidya, A., & Lu, Z. (2019). An unusual case of pituitary fossa aspergillus abscess in AIDS patient mimicking pituitary adenoma: Case report and literature review. *Radiology of Infectious Diseases*.
14. Brue, T., & Castinetti, F. (2016). The risks of overlooking the diagnosis of secreting pituitary adenomas. *Orphanet journal of rare diseases*, *11*(1), 135.