

# Cryptococcal Granuloma Of The Sella Presenting Like a Pituitary Adenoma: A Case Report

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## Citation

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## Abstract

Cryptococcal infection of the brain is exceptionally rare and is seen in immunocompromised patients. Most of these patients present with Cryptococcal meningitis which is life threatening. Cryptococcal lesions can involve the cerebral hemisphere, cerebellum and spinal cord. In our case report, a Cryptococcal granuloma involving the sella and the pituitary gland in a 60 year old female with steroid induced Diabetes Mellitus is described. The patient presented with headache and ptosis of left eye with diplopia. MRI with Gadolinium enhancement was suggestive of a sellar mass extending into the suprasellar area, optic chiasma and bulging into the left cavernous sinus, which was diagnosed to be an invasive pituitary adenoma. The hormonal study showed a low Cortisol level. The patient was operated by Transnasal, Transsphenoidal approach and the tumor was excised. The histopathological report suggested it to be a Cryptococcal granuloma, confirmed by PAS staining. The patient was started on oral Fluconazole 400mg/day, for a period of 3 weeks. The patient showed a steady progressive improvement, with ptosis and diplopia of the left eye disappearing completely.

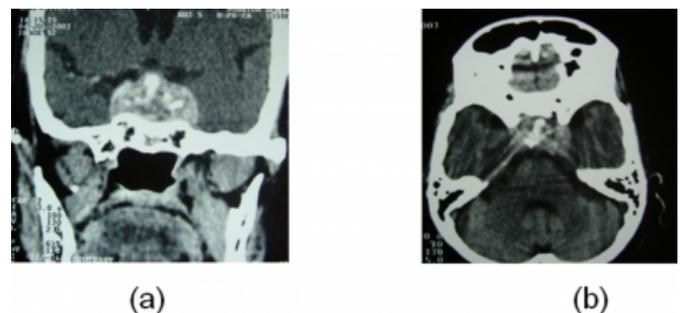
## CASE REPORT

A 60 year old right handed female presented with complaints of headache and drooping of the left eyelid along with double vision for two weeks. She was started on corticosteroid therapy for a period of 2 years by a general practitioner for weakness and debility. She was off the treatment for the last one year and was not receiving any medication at the time of presentation. Neurological evaluation revealed a temporal hemianopia, along with 3<sup>rd</sup>, 4<sup>th</sup> and 6<sup>th</sup> nerve paresis. A fundus examination revealed papilloedema in the left optic disc. On admission the patient was diagnosed to have diabetes mellitus and was started on insulin. A contrast CT scan showed an enhancing lesion in the sellar, suprasellar region reaching upto the optic chiasma and laterally bulging into the left cavernous. MRI with gadolinium was suggestive of a large oval heterogeneous; predominantly iso to hypointense lesion on both T1 and T2 weighted images in the sella and parasellar region with involvement of the left cavernous sinus and the internal carotid artery. The pituitary tissue was not visualized separate from the lesion. The hormonal profile showed a low cortisol level of less than 100mcg/ml. The patient was operated by transnasal transsphenoidal route. The dura in the sellar region was thickened unlike pituitary adenoma where it is normally thinned out. On incising the dura in a cruciate

manner, thick grayish yellow caseous material was encountered. The peripheral capsule was thick and densely adherent. Post operative period was uneventful. The frozen section was suggestive of an inflammatory lesion. The histopathological examination revealed a dense granular necrotic material with mononuclear cell infiltrate of numerous round to oval fungal bodies confirmed by PAS and GMS stains. CSF studies were negative for Cryptococcal antigen and India ink. The patient was started on oral Fluconazole 400mg/day for 3 months. On follow up after 15 days, ptosis and diplopia had disappeared completely.

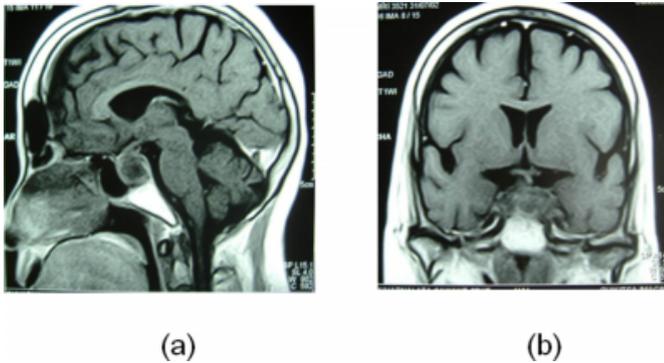
## Figure 1

Figure 1: CT scan with contrast coronal (a) and axial (b) sections showing sellar lesion with parasellar extension.



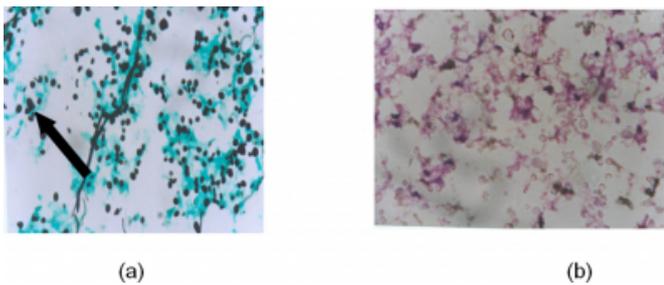
**Figure 2**

Figure 2: MRI with Contrast, saggital (a) and coronal (b) sections, showing the sellar lesion mimicking a pituitary adenoma.



**Figure 3**

Figure 3: ( a, GMS stain) Cryptococcus neoformans round and oval forms (arrow) showing budding with no background inflammation.( b, H & E stain) showing Cryptococcus neoformans round and oval forms some of which shows budding.



## DISCUSSION

Cryptococcus is encapsulated yeast like fungus that affects males more frequently. The disease is usually contracted by inhalation of airborne Cryptococcus neoformans resulting in subclinical infection and cavitary lesions in the lungs. The CNS is involved via heterogeneous dissemination which is usually in the form of meningitis or meningoencephalitis. Mass lesions like granuloma or cysts are also reported. The cerebral hemispheres are involved in 56% of cases, cerebellum in 10% and spinal cord in 17%. Multiple organ involvement is seen in 25% cases. CSF staining with India ink and latex cryptococcal agglutination test detects cryptococcal meningitis in 95% of cases. In mass lesion the imaging appearance is non specific and they usually appear as a ring enhancing or solid lesions on MRI. The final diagnosis can only be made by histopathological examination (2, 3, 4, 5). Su M. C. et al (6) reported that Cryptococcus neoformans is widely distributed through out the world and causes opportunistic and non contagious

infections in man. Involvement of the central nervous system has been found in 70% of the patients at the time of diagnosis and meningitis and meningoencephalitis are the most common manifestation. Space occupying cryptococcal granuloma is infrequently encountered in brain. Donnet A. et al (3) reported that 50% of the cases of cryptococcal infection are superimposed on an immunosuppressive or other general debilitating condition and hydrocephalus was the most common neurosurgical complication of cerebral cryptococcosis. Li MD et al (4) reported 7 cases of cryptococcal granuloma of the brain. All of them were confirmed histopathologically after operation or autopsy. The granuloma not only involved cerebral hemisphere but also the basal ganglion, hypothalamus, cerebellum and brain stem.

The chemical examination of CSF is similar to the findings of tuberculous meningitis and a large toruloma is easily mistaken for a brain tumor. As of yet a pituitary cryptococcal granuloma has not been described in the literature. Penar P et al (5) reported two cases of intraventricular cryptococcal granuloma that were treated favorably. Arumugusamy N et al (1, 2) advocated total surgical extirpation of the granuloma along with 5 fluorocystine for complete cure. We treated our patient with fluconazole after the surgery and the result was good. Agglutination studies help in establishing the diagnosis, but in our case the antigen and India ink test were negative. This could be explained, as the disease was localized to sella without dissemination into the CSF. This also supports the fact that the localized granuloma in the brain respond better to surgical excision and antifungal therapy, as compared to disseminated disease, like meningitis and encephalitis.

## CONCLUSION

Cryptococcal granuloma of the brain is difficult to diagnose preoperatively and pituitary granuloma mimicking an adenoma is extremely rare. Surgical excision, an early histopathological diagnosis and antifungal therapy results in complete recovery.

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