

PITUITARY ABSCESS: A CASE REVIEW

Absceso hipofisario: Revisión a propósito de un casoMARCO CHIPANA S.^{1a}, SANDY CABALLERO M.^{1b}, MANUEL CUEVA N.^{1b}, PEDRO SOTO P.^{1c}¹Department of Neurosurgery of the Dos de Mayo National Hospital, Lima, Perú. ^aNeurosurgeon, ^bResident of Neurosurgery, ^cChief of Neurosurgery.

ABSTRAC

Introduction: Pituitary abscess is an intrasellar infection that generates a clinical picture like any pituitary tumor. Its origin can be of hematogenous origin or by infection of a nearby site or pre-existing lesion.**Clinical case:** The case of a 38-year-old male patient with progressive headache, vomiting and visual impairment is presented. It was evaluated with magnetic resonance of the sellar region. Transsphenoidal surgery was performed and the infusion of intravenous antibiotic therapy continued.**Conclusion:** Pituitary abscess is an uncommon infectious pathology whose diagnosis requires clinical and radiological evaluation. Surgery is usually necessary for diagnostic confirmation and treatment.**Keywords:** Brain Abscess, Pituitary Neoplasms, Pituitary Disease (source: MeSH NLM)

RESUMEN

Introducción: El absceso hipofisario es una infección intrasellar que genera cuadro clínico similar a cualquier tumor hipofisario. Su origen puede ser de origen hematogéno o por infección de un sitio próximo o lesión preexistente.**Caso Clínico:** Se presenta el caso de un paciente varón de 38 años con cefalea progresiva, vómitos y deterioro visual. Fue evaluado con resonancia magnética de región sellar. Se realizó cirugía transesfenoidal y se continuó la infusión de antibióticos por vía endovenosa.**Conclusión:** El absceso hipofisario es una patología infecciosa infrecuente cuyo diagnóstico requiere evaluación clínica y radiológica. La cirugía generalmente es necesaria para la confirmación diagnóstica y tratamiento.**Palabras clave:** Absceso cerebral, Neoplasias hipofisarias, Enfermedades de la hipófisis. (fuente: DeCS Bireme)

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Pituitary abscess is an uncommon infectious process of the Turkish chair that represents less than 1% of pituitary pathologies ¹. Its origin can be from: 1) complication of pre-existing lesions 2) by direct extension or by hematogenous route 3) No source of clear infection.

Pituitary abscesses are classified into primary when they develop on a healthy gland, and secondary when they do on a gland with underlying pathology. Pathogens are unknown in 50% of cases.

The clinical picture resembles that of pituitary adenomas, with signs and symptoms of chiasmatic compression and glandular dysfunction. They occur in both sexes in the same proportion and bimodal distribution with peaks of greater frequency in the second and fifth decade of life has been described. Its pre-surgical diagnosis is difficult because it is very similar clinically and radiologically to pituitary adenomas. ¹

In this paper we present a case of a pituitary abscess treated in the Neurosurgery Service of the Dos de Mayo National Hospital.

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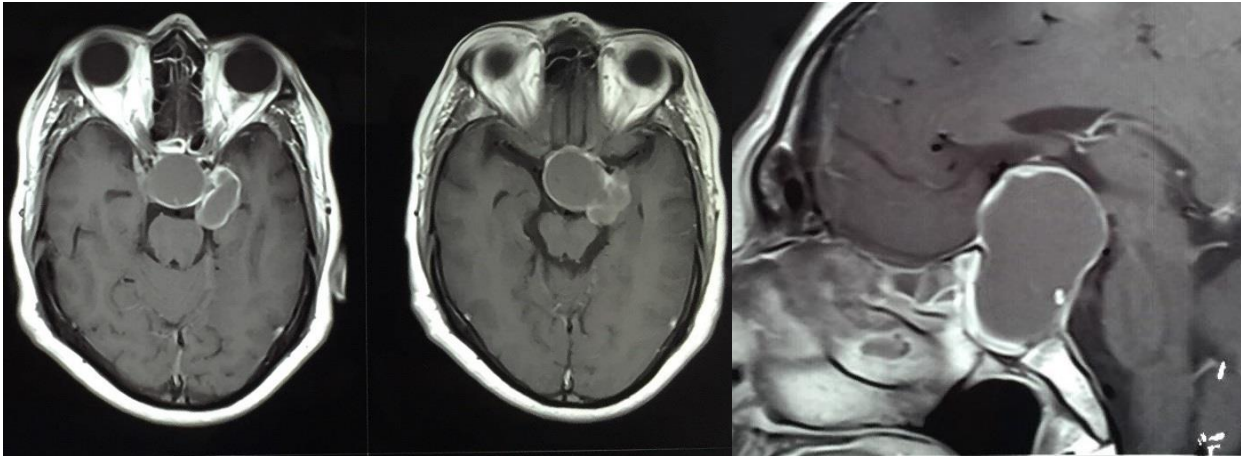


Fig. 1. MRI images of the sellar region that show lesion with hypointense content in T1, with contrast uptake in capsule. Note the sphenoid sinus extension and left parasellar region.

CLINICAL CASE

History and Examination: A 38-year-old male patient, with no known pathological history, attends the emergency at Dos de Mayo National Hospital after presenting an episode of generalized tonic-clonic seizure. They also report that approximately 5 months before, he presented with a headache that was predominantly frontal, progressive in intensity, associated with vomiting, dizziness, and decreased visual acuity.

He was evaluated with brain tomography in which intrasellar tumor was evidenced, considering as a pituitary adenoma diagnosis. Nuclear magnetic resonance imaging (MRI) of the sellar region was then performed,

demonstrating the presence of a rounded and multiloculated hypointense lesion, 39 mm high, with well-defined edges, which invades the sphenoid sinus, and extension to the left parasellar region, with intense contrast uptake and compression on the optical apparatus and third ventricle.

Treatment: With the hormonal evaluation, pituitary hypofunction was verified, so he received treatment with levothyroxine and prednisone for two weeks until he was surgically operated by an endonasal transsphenoidal approach. The whitish fibrous capsule with purulent content of approximately 30 cc was found.

Clinical evolution: After surgery, the patient received intravenous antibiotic treatment with Cefazidime, Vancomycin and Metronidazole, evolving favorably the first week, however, he then had deterioration of sensory and



Fig. 2. Intraoperative image of the endonasal transsphenoidal approach with evidence of purulent content of approximately 30cc. It is possible to evacuate in its entirety.

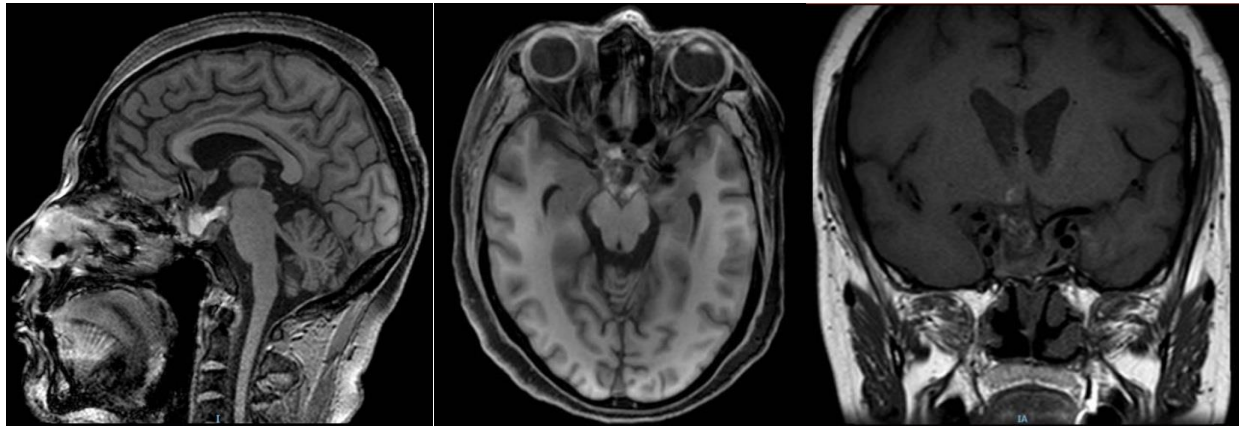


Fig. 3. MRI images of the control sellar region after surgery and 3 weeks of antibiotic therapy. Note the resolution of the lesion, but discreet enhancement in the abscess capsule persists.

signs of meningoencephalitis so that Cefatazidime was replaced by Imipenem with which the patient recovered satisfactorily, improving acuity and visual field and being discharged. In the postoperative controls, total recovery of visual acuity was found, however, it persisted with moderate hypopituitarism, so it continued with hormonal replacement with prednisone, levothyroxine and testosterone.

DISCUSSION

Pituitary abscesses are an uncommon pathology representing almost 1% of all pituitary pathology. The first case was described in 1914 by Simmonds, and then just over 120 cases have been published ¹.

Approximately two thirds of pituitary abscesses originate in healthy pituitary glands or without a history of local pathology, while one third of cases are related to a previous pituitary disease, such as adenomas, Rathke cysts, surgery or radiotherapy, fistulas, etc. ²⁻⁶

The infection may be caused by direct extension of a nearby focus or by hematogenous route. It has been postulated that sphenoid sinusitis is the most frequently implicated infectious focus ^{7,8}, although in most cases the infectious focus is not apparent ^{9,10}.

Endocrine manifestations are frequent at the time of diagnosis. Depending on the volume of the abscess, symptoms and signs of visual origin may also be present. The most common hormonal dysfunctions are varying degrees of hypopituitarism, and even diabetes insipidus.

Another frequent entity is aseptic repeat meningitis (30-40%) ^{1,2,3,7,11}. Some reports suggest the possible release of the purulent content of the abscess that would act as an irritant that would cause such meningitis ^{4,11, 12} In general, the delay time between clinical debut and diagnosis ranges from a few months to even years ¹

Because, in imaging studies, similarity with pituitary adenomas is frequent, radiological findings, like the clinical picture, also do not allow a simple pre-surgical diagnosis. However, in the study with nuclear magnetic resonance, the presence of confluent lesions, the homogeneous consistency

of its content and the capture of contrast in its capsule (as in the case presented below) can guide its diagnosis ^{10,13}.

The whitish avascular capsule and its purulent content as a surgical finding confirm the diagnosis. Positive cultures are not considered essential for the diagnosis of abscess, since approximately 50% of the cases are negative cultures ^{1-3,7}.

Surgical resection of the abscess accompanied by broad-spectrum endovenous antibiotic treatment and hormonal support are the basis of the treatment. Despite all this, pituitary abscesses have high mortality, especially when associated with meningitis^{3,7}. Currently, mortality is less than 10% ¹.

In our series, the evolution was good in all cases, even though the surgery was carried out after a long-term clinic.

CONCLUSION

Pituitary abscesses are uncommon pathologies that should be considered within the differential diagnosis of pituitary cystic lesions. Whether due to local infection or dissemination, its morbidity and mortality is influenced by the risk of meningitis. Some characteristics in magnetic resonance imaging can help guide the presurgical diagnosis.

The clinical picture includes hormonal alterations and visual symptoms similar to those of any tumor at that level. Surgery, broad-spectrum antibiotic treatment and hormonal support are essential.

REFERENCES

1. Vates GE, Berger MS, Wilson CB. Diagnosis and management of pituitary abscess: a review of twenty-four cases. *J Neurosurg.* 2001;95: 233-41.
2. Galicia I, Orea A, Abad A, Aragón A, Garcíadurruía P, Leib B, Estrada J. A propósito de un caso de lesión inflamatoria hipofisaria. *Medicina Militar.* 1993;49: 122.

3. Galicia I, Orea A, Abad A, Aragón A, Garcíadurrutia P, Leib B, Estrada J. Absceso hipofisario, estudio a propósito de un caso. **Medicina Militar.** **1993;49**: 544.
4. Ford J, Torres LF, Cox T, Hayward R. Recurrent sterile meningitis caused by a pituitary abscess. **Postgrad Med J.** **1986;62**: 929-31.
5. Kroppenstedt SN, Liebig T, Mueller W, Gräf KJ, Lanksch WR, Unterberg AW. Secondary abscess formation in pituitary adenoma after tooth extraction. **J Neurosurg.** **2001;94**: 335-8.
6. Scanarini M, Cervellini P, Rigobello L, Mingrino S. Pituitary abscesses: report of two cases and review of the literature. **Acta Neurochir.** **1980;51**: 209-17.
7. González-Ibarra FP, Guzmán-Astorga CP, Leyva- Álvarez EA, Hernández-Félix CP, Estevan-Ortiz PD, Llanos-Navidad M. Pituitary abscesses. Report of seven cases and review of the literature. **J Neurosurg.** **1977;46**: 601-8.
8. Galicia I, Orea I, Abad S, Aragón A, Garcíadurrutia P, Leyb L, Estrada J. Absceso hipofisario. Revisión a propósito de un caso. **Endocrinología.** **1992;39**: 189-91.
9. Berger SA, Edberg SC, David G. Infectious disease in the sella turcica. **Infect Dis.** **1986;8**:747-55.
10. Conno SE, Penney E. MR findings in three pituitary abscesses. Case reports. **Acta Radiol.** **1998;39** :490-3.
11. Bjerre P, Riishede J, Lindholm J. Pituitary abscess: an unusual presentation of abscess. **Acta Neurochir.** **1983;68**: 187-93.
12. Sabbah P, Bonardel G, Herve R, Marjou F, Hor F, Pharaboz C, Bauduceau B. CT and MRI findings in primitive pituitary abscess: a case report and review of literature. **J Neuroradiol.** **1999;26**: 196-9.
13. Kaur A, Agrawal A, Mittal M. Pituitary abscess. Case report. **J Neurosurg.** **1980;53**: 851-2.

Disclosures

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Author Contributions

Conception and design: All the authors. *Drafting the article:* Chipana. *Critically revising the article:* Chipana, Caballero, Cueva, Soto. *Reviewed submitted version of manuscript:* Chipana. *Approved the final version of the manuscript on behalf of all authors:* Chipana.

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