

Spontaneous Pneumocephalus associated with a giant Craniopharyngioma

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INTRODUCTION

Pneumocephalus, also known as intracerebral arocele or pneumatocele is defined as the presence of gas within any of the intracranial compartments of the cranial vault.

It is commonly encountered after neurosurgical procedures but can also be caused by craniofacial trauma and tumors of the skull base or infections with gas-producing organisms. Rarely, it can occur spontaneously.

Complications of tension pneumocephalus include intracranial air embolism and cardiac arrest or ascending meningitis in patients with CSF leaks, with an incidence of about 30% and a cumulative 10-year risk of 85%.

Although most collections are small, behave benign, and respond to conservative therapy, symptomatic cases may require urgent evaluation and treatment.

CASE REPORT

A 39-year-old man presented in the emergency department with significant visual loss, headache and rhinorrhea.

He had no previous history of head trauma or medical illnesses.

He complained for increasing fatigue, headache and progressive loss of libido for the last 20 years.

MEDICAL HISTORY

His medical history was significant for delayed and incomplete puberty.

He also mentioned early discharge from the armed forces (due to hypogonadism)

CLINICAL EXAMINATION

His height was 160cm. He had low blood pressure, orthostasis and diminished pubic, axillary, and secondary sexual facial hair. His testicular volume was 3 ml and he had micropenis. Optical field examination revealed preservation of central vision only.

LATERAL RADIOGRAPH OF THE SKULL IN THE EMERGENCY DEPARTMENT



LABORATORY VALUES AND HORMONE MEASUREMENTS

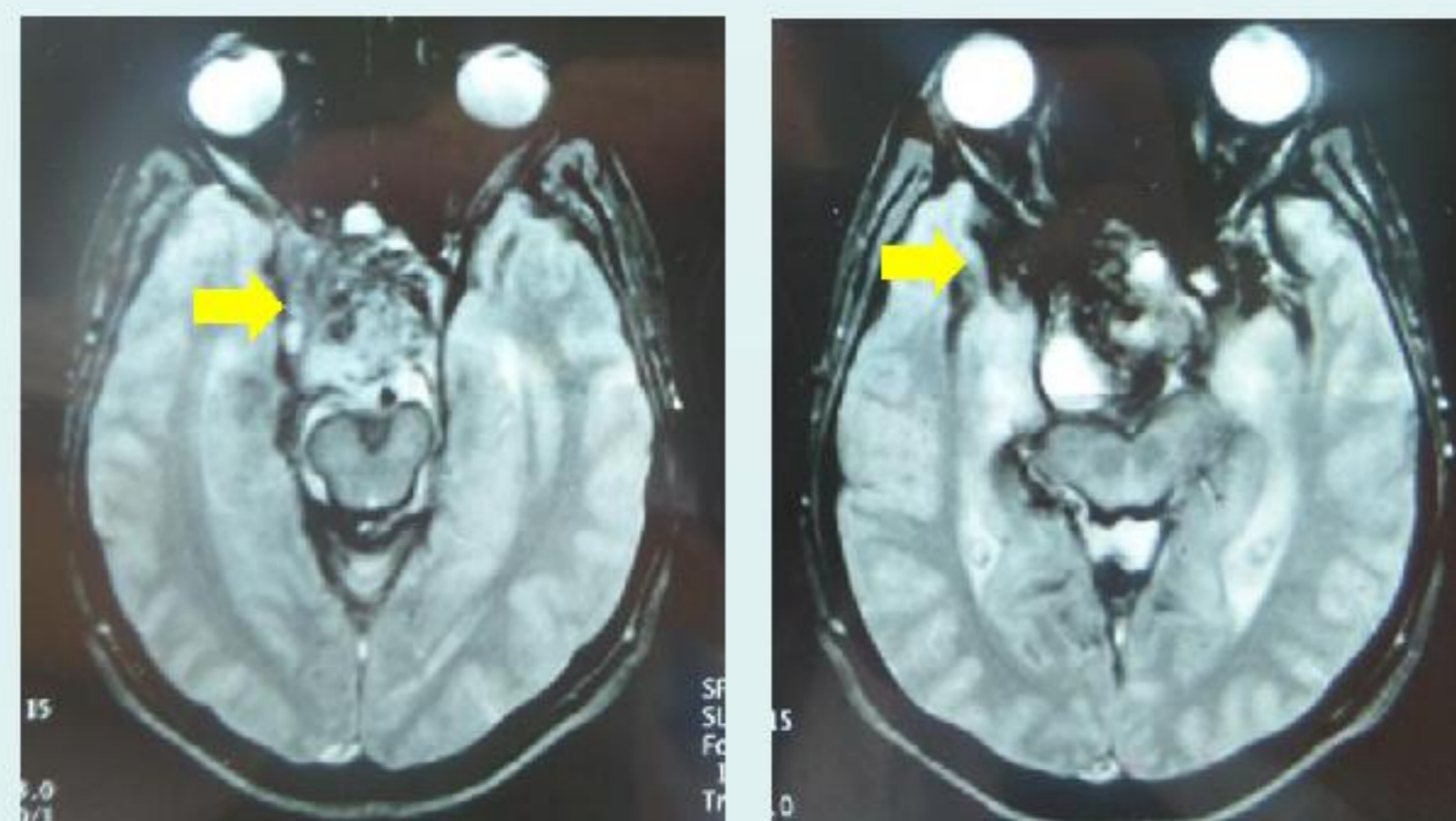
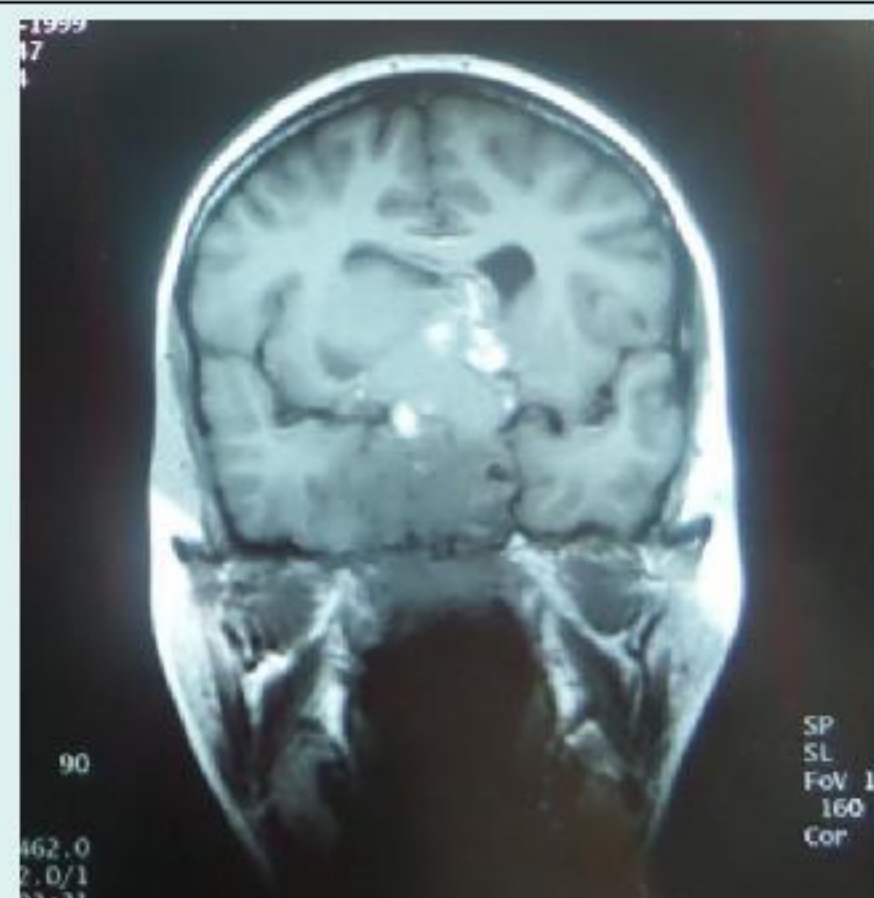
Hgb	10 g/dl
Glu	102 mg/dl
Cr	0,7 mg/dl
Na	143 meq/L
K	4,4 meq/L
Urine Vol	2000 ml/24h
SG	1020

Hormone	Value	Normal Range
PRL	80	1,8-16 ng/mL
TSH	0,3	0,4-3,1 μIU/ml
FT4	0,5	0,9-2,2 ng/dl
ACTH	3	5-46 pg/ml
Cortisol	5	6-23 μg/dl
FSH	0,1	0,9-8,9 mIU/ml
LH	0,6	0,8-10 mIU/ml
FTesto	< 9	9-41 pg/ml

The patient was diagnosed with panhypopituitarism

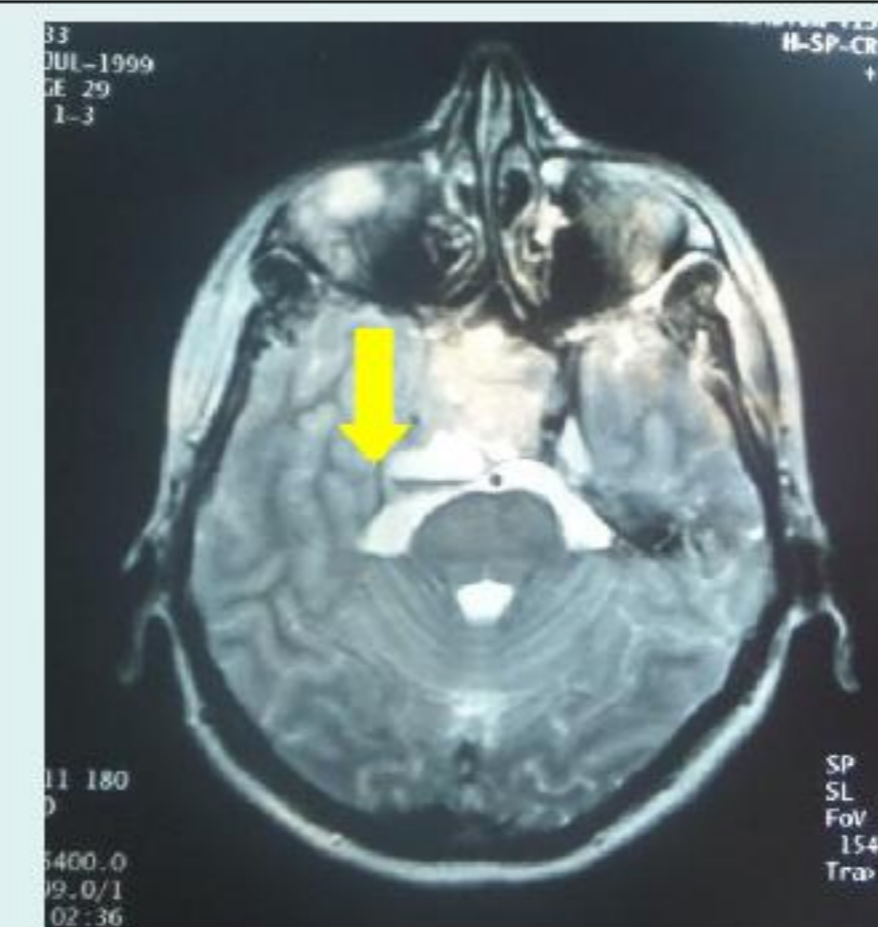
BRAIN MRI

A midline large space-occupying inhomogeneous mass was extending and filling the suprasellar cistern, pituitary fossa and sphenoid sinus

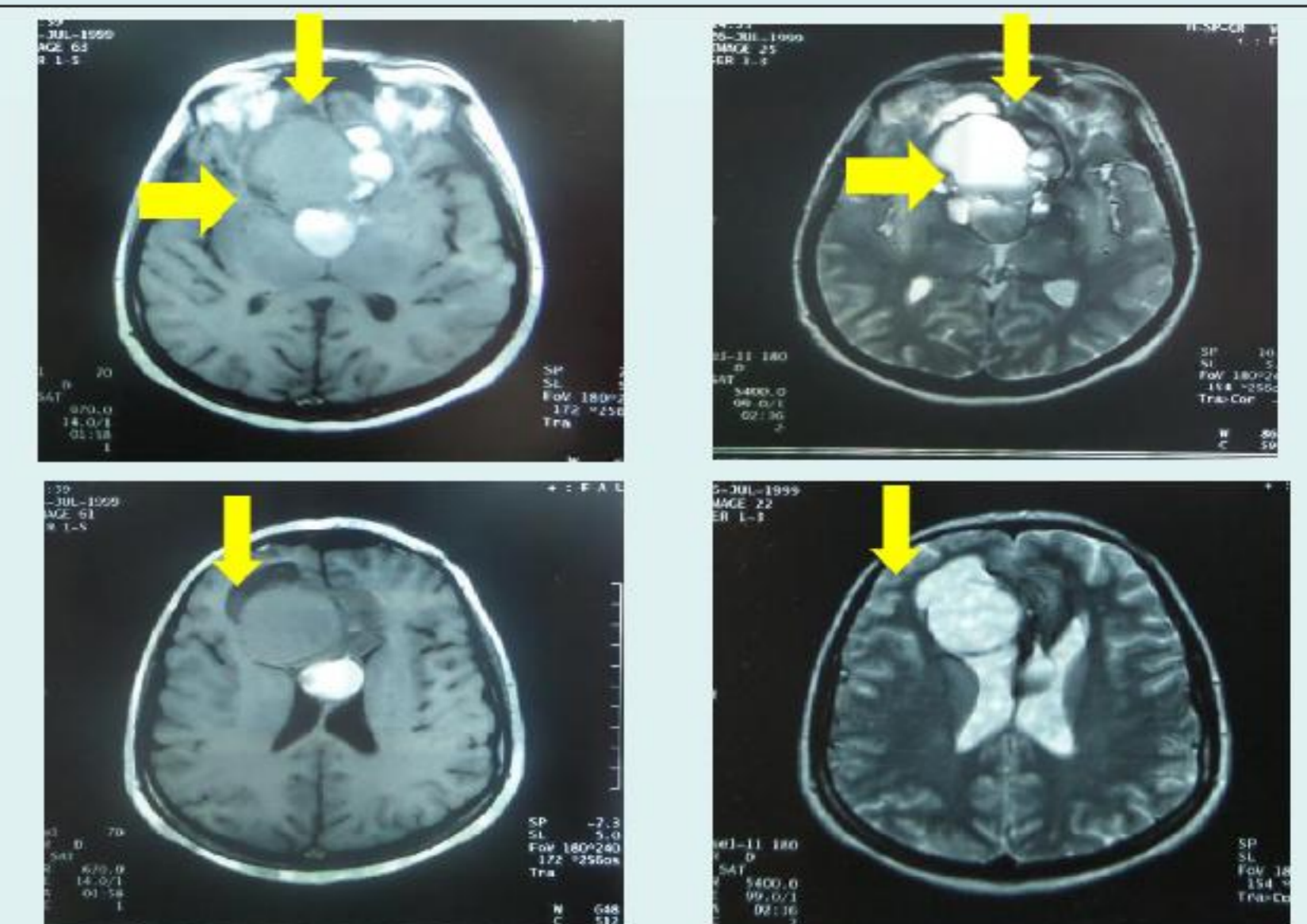


Areas with loss of signal intensities (SI) indicating the presence of air

A hypointense rim representing hemosiderin deposition at the pial meninger



Cystic lesions with increased protein concentration and intracystic hemorrhagic element



TREATMENT

The patient underwent neurosurgical debulking of the tumor and was placed in hormone replacement therapy with marked improvement

HISTOLOGICAL EXAMINATION

Adamantinomatous craniopharyngioma
Immunohistochemistry (+) for MNF-116

CONCLUSIONS

Although extremely rare, a spontaneous pneumocephalus should be considered as a possible diagnosis in patients with large pituitary lesions, rhinorrhea and non-specific neurological manifestations. Early treatment of this potentially life-threatening disorder improves surveillance of these patients.

REFERENCES

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- Mollá E et al, *Eur Radiol* 2002, 12:1829-1836
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