

# Isolated Pituitary Sarcoidosis Stained with a Specific Monoclonal Antibody against *Propionibacterium Acnes*: A Case Report

Keywords:  
Isolated pituitary sarcoidosis  
*Propionibacterium Acnes*  
Adrenal insufficiency

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## Introduction

- Sarcoidosis is a systemic granulomatous disorder that usually affects multiple organs. Therefore, it is difficult to diagnose isolated sarcoidosis.
- Recent study has identified *Propionibacterium acnes* (*P. acnes*) in lungs and lymph nodes of patients with sarcoidosis using a monoclonal antibody specific for this bacterium (PAB), providing strong evidence for *P. acnes* as a pathogen of sarcoidosis (Modern Pathology, 2012).
- We report the first case of isolated pituitary sarcoidosis stained with PAB.

## Case Presentation

### Case

- A 29-year-old Japanese man suddenly developed severe headache and malaise.

### History of Present Illness

- His illness had started 2 weeks previously with flu-like symptoms followed by worsening headache, general fatigue and appetite loss.
- Since his symptoms had worsened, he sought evaluation in the emergency department.
- He had a history of skin peeling therapy for pimples 1 year prior to the presentation.

### Physical Examinations

- His height was 175 cm and his weight was 72.5 kg.
- On admission, his temperature, blood pressure and heart rate were 36.7° C, 117/76 mmHg and 80 beats/min, respectively. He was alert and oriented. Cardiothoracic, abdominal and neurological examinations, including visual field and EOMs, yielded normal findings.

### Laboratory Data

- His serum sodium level was low (123 mEq/L).
- Endocrinologically, baseline levels of plasma ACTH, cortisol, LH, FSH, testosterone, serum GH, IGF-1 were low. Serum TSH and free T4 levels were low, but free T3 level was within normal range. Serum prolactin level was elevated (Table 1).

**Table 1.** Basal hormonal profiles on admission.

ACTH	4.8	pg/ml
Cortisol	0.4	µg/dl
TSH	0.334	µU/ml
Free T3	2.76	pg/ml
Free T4	0.72	ng/ml
GH	0.75	ng/ml
IGF-1	181	ng/ml
PRL	30.0	ng/ml
LH	0.3	mIU/ml
FSH	1.9	mIU/ml
Testosterone	10.3	ng/dl

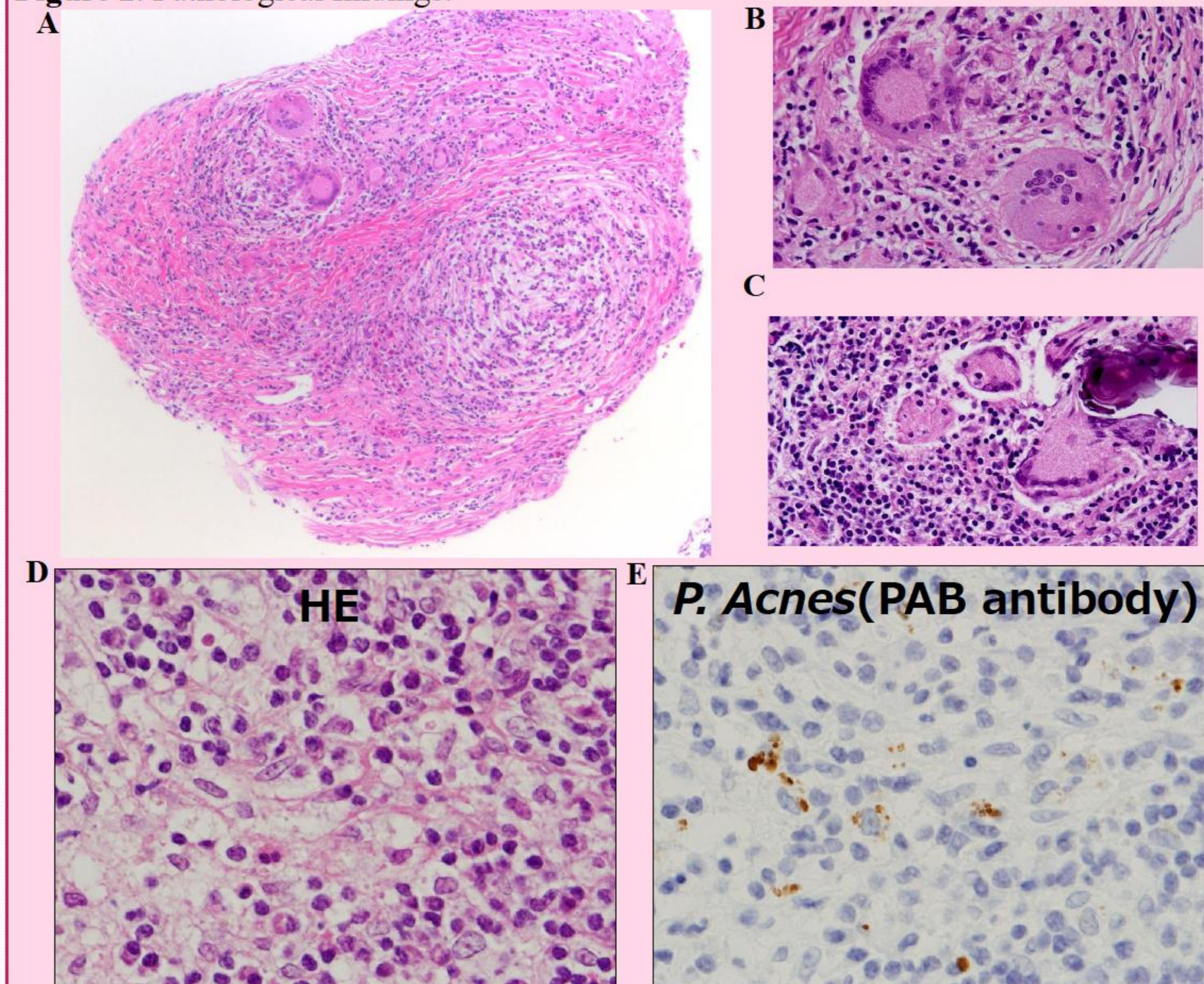
**Table 2.** Postoperative basal hormonal profiles.

ACTH	11.2	pg/ml
Cortisol	10.2	µg/dl
TSH	2.810	µU/ml
Free T3	2.88	pg/ml
Free T4	1.32	ng/ml
GH	1.18	ng/ml
IGF-1	161	ng/ml
PRL	31.5	ng/ml
LH	2.1	mIU/ml
FSH	2.3	mIU/ml
Testosterone	542.3	ng/dl

## Summary of Clinical Course

- Hydrocortisone replacement was initiated.
- MRI revealed a diffusely and symmetrically enlarged pituitary, protruded upward with a thickened stalk and inhomogeneously enhanced with gadolinium, suggesting anterior hypophysitis (Fig1-A).
- Two weeks after the admission, biopsy was performed using the endoscopic transsphenoidal approach.
- Pathologically, the swollen area was composed of noncaseating granulomas, contained giant cells surrounded by lymphocytes (Fig2-A,B,C and D). Positive staining was observed with PAB for giant cells and infiltrated mononuclear cells (Fig2-E).
- There were no other laboratory findings and images to affirm sarcoidosis or other granulomatous disease (Table3).
- Four months after the surgery, endocrinological findings were improved and MRI showed reduction of pituitary and stalk enlargement (Fig2-B).

**Figure 2.** Pathological findings.

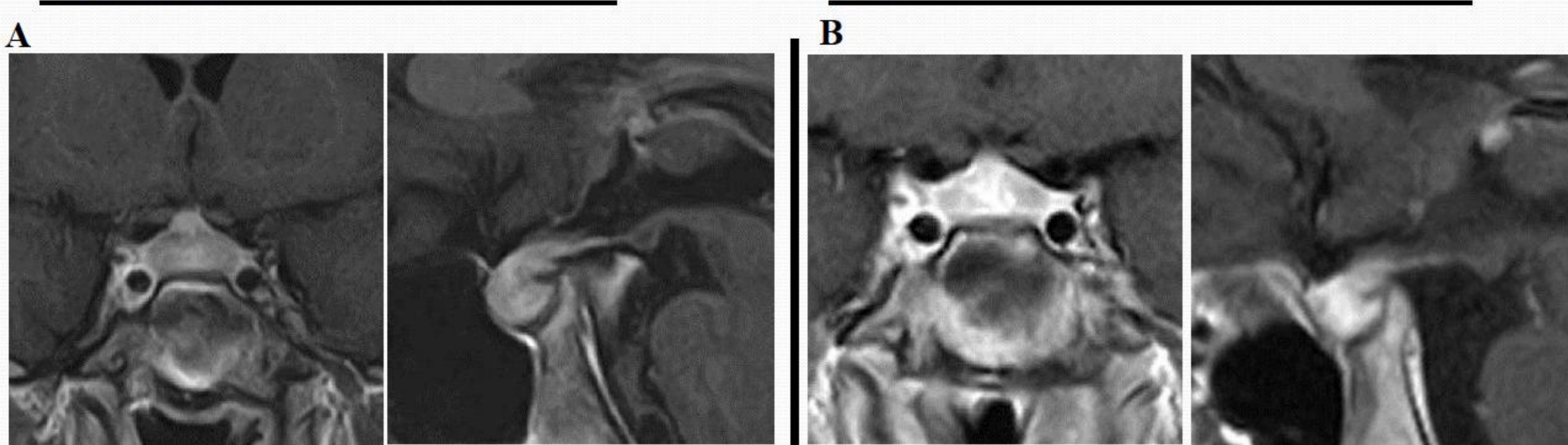


## Conclusion

Isolated pituitary sarcoidosis is an extremely rare inflammatory disorder. **This is the first case in which *P. acnes* were identified exclusively in sarcoid granulomas of the pituitary.** PAB staining could be a useful tool in diagnosing isolated sarcoidosis.

**Table 3.** Workup for systemic sarcoidosis and other granulomatous disease.

ACE	8.8	IU/L (8.3-21.4)
Lysozyme	7.3	µg/ml (5.0-10.2)
Urine Ca	0.08	g/day (0.10-0.30)
BNP	<4	pg/ml
Tuberculin reaction	4x2.5cm of redness, no firm bump	
QFT	negative	
Fundus examination	no remarkable changes	
Ga scintigraphy	negative	
CT scans	no bilateral hilar lymphadenopathy	
CSF	normal range of protein level	



**Figure 1.** Magnetic resonance images of the pituitary and stalk on admission (A) and 4 months after TSS.

