Ashford and St. Peter's Hospitals NHS
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An unusual case of pituitary pathology and the utility of whole body 18F-FDG PET-CT imaging in identifying extraneural biopsy targets

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INTRODUCTION: Most cases of hypopituitarism are due to pituitary tumours or their treatment[1] ·Surgery is the treatment of choice in cases of pituitary adenomas which account for 90% of sellar and parasellar lesions[2]. We present an unusual case of a non-adenomatous pituitary mass presenting with panhypopituitarism.

CASE: A 56-year-old male with a background of sickle cell trait and hypertension presented with syncope, lethargy and nausea. He also reported an 18-month history of headaches and recurrent episodes of sinusitis.
On examination he had acromegalic features as well as proximal myopathy with normal visual fields, this prompted pituitary function tests to be performed which showed panhypopituitarism (Figure 1). Routine blood tests also revealed AKI (figure 2), which was further investigated with a vasculitic screen and a renal USS. His renal USS proved unremarkable however his vasculitis screen showed elevated anti-MPO and Anti-PR3 antibodies and a raised ESR (figure 2). His urinary protein: creatinine ratio was normal with no casts or red blood cells seen.

IGF-1	fT3	fT4	TSH	LH	FSH	Testosterone
27.1	2.9	8.9	<0.03	<0.5	<1	3.4

Figure 1: Pituitary Function Test Results

Anti-MPO	Anti-PR3	C3	C4	ESR	Urea	Creat	eGFR
7.9	2.4	2.03	0.46	73	6.7	201	30

Figure 2: Vasculitis Screen and Renal Function

In light of his panhypopituitarism, a pituitary MRI was performed which demonstrated a 16x10mm pituitary mass with suprasellar extension but no optic nerve compression (figure 3).
It was hypothesised that the pituitary mass may be related to the abnormal autoimmune profile, with a possible underlying vasculitic or granulomatous process as the cause. A decision was made to perform an 18F-FDG whole body PET-CT which revealed FDG avid biapical lung nodules and right cervical lymphadenopathy (figure 4)

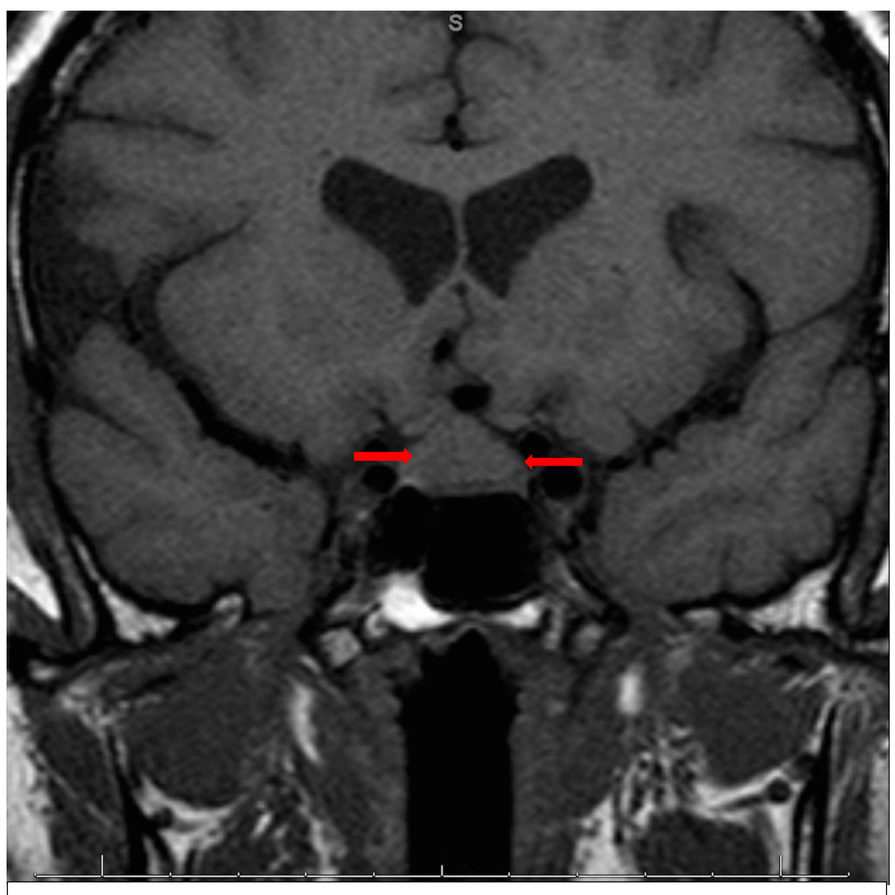

Figure 3: Pituitary MRI

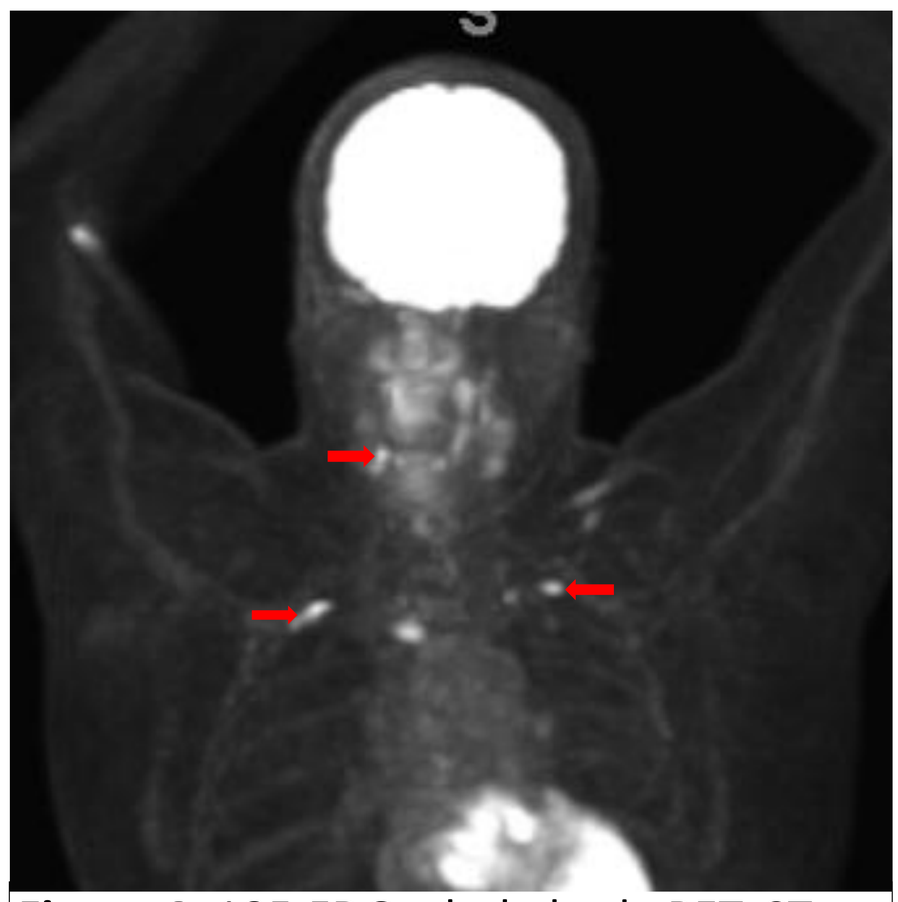

Figure 4: 18F-FDG whole body PET-CT

CONCLUSION: The biochemical and radiological findings combined with the patient's longstanding history of sinusitis point to a granulomatous/vasculitic cause for his pituitary mass. PET-CT has provided a target for extraneural biopsy, which is less risky and may be of higher diagnostic yield than neural biopsy. On confirmation of the underlying diagnosis we aim to initiate medical treatment of the underlying cause which might enable reduction/resolution of his pituitary mass without the risks of surgery.

References
1. Prabhakar VKB, Shalet SM. Aetiology, diagnosis, and management of hypopituitarism in adult life. *Postgraduate Medical Journal*. 2006;82(966):259-266. doi:10.1136/pgmj.2005.039768. **2** Attanasio R, Cozzi R. *Explicative Cases of Controversial Issues in Neurosurgery.* 1st ed. InTech; 2012.