

# The Accuracy of Bilateral Inferior Petrosal Sinus Cannulation and Usefulness of Prolactin Adjustment in One Scottish Centre

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## Introduction

Bilateral inferior petrosal sinus sampling (BIPSS) is the gold standard investigation in Cushing's disease for identifying the pituitary as the ACTH source.

This technique aims to demonstrate a gradient of central:peripheral ACTH levels of >2:1 in such patients, or >3:1 after CRH stimulation.

In patients without significant pituitary MRI abnormalities this facilitates neurosurgical exploration.

The test is limited by difficulties in achieving adequate sinus cannulation in some patients. Sinus to peripheral prolactin ratio is being used in some centres to confirm cannulation and allow for result adjustment, with ratio >1.8 indicating success.

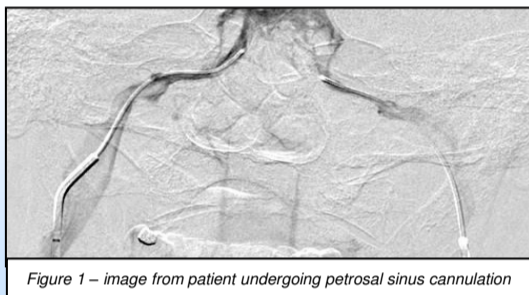
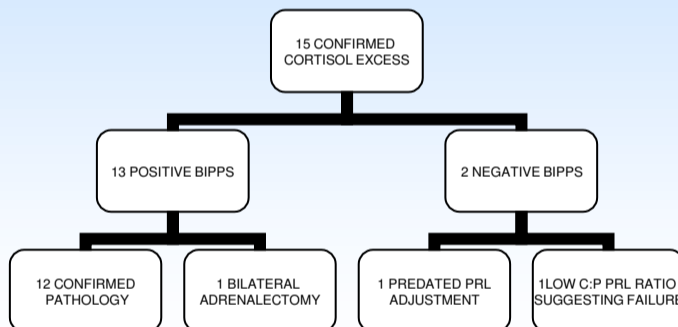


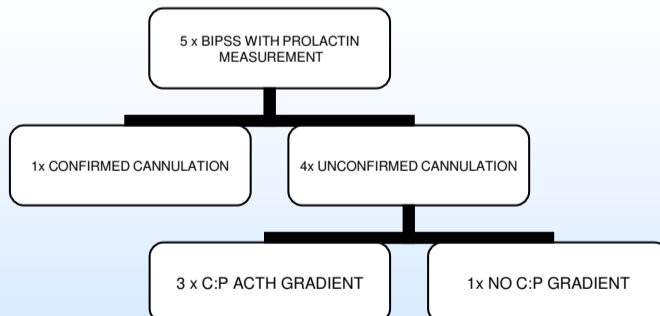
Figure 1 – image from patient undergoing petrosal sinus cannulation

## Case Review

We carefully reviewed electronic case records of all fifteen patients who underwent BIPSS in our centre from 2010-2015.



Of the fifteen patients with suspected Cushing's disease, BIPSS successfully confirmed the pituitary as the source in thirteen. Of the two negative results, one had a low central:peripheral prolactin ratio implying possible procedural failure and further BIPSS is planned.



Interestingly, since prolactin testing began in 2013, only 1 patient had bilateral cannulation confirmed. Of the four with apparently unsuccessful cannulation, the ACTH results were still diagnostic of Cushing's disease in three.

## Conclusion and References

BIPSS is a reliable test to confirm Cushing's disease; we report a 87% success rate over the past 5 years. However, our recent data does suggest that the real usefulness in central prolactin measurement in BIPSS is in confirming an unsuccessful cannulation in an apparently 'negative' test.

1. Mulligan, G.B., Faiman, C., Gupta, M., Kennedy, L., Hatipoglu, B., Hui, F., Weil, R. J. and Hamrahian, A. H. (2012), Prolactin measurement during inferior petrosal sinus sampling improves the localization of pituitary adenomas in Cushing's disease. *Clin Endocrinol*, 77: 268–274.