Aggressive Prolactinoma treated with a large dose of dopamine agonist and radiotherapy

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Introduction:
Prolactinomas account for approximately 40% of all pituitary adenomas, with an estimated prevalence of 100 prolactinomas per million adults. Dopamine agonists currently represent the mainstay of treatment. Nevertheless, increasing dopamine-agonist dosage, surgery, and radiotherapy may be necessary in some cases, such as aggressive, dopamine-agonist resistant or atypical prolactinomas.

Case:
We report the case of a 55 year old man who was incidentally found to have a large pituitary macroadenoma on MRI scan, during his investigations for persistent frontal headache. He was otherwise asymptomatic. MRI scan showed a large pituitary tumour 3.9 x 5.2 cm, extending from pituitary fossa filling the sphenoidal sinus, abutting the right carotid and encasing the left carotid artery and displacing the left temporal lobe. He was initially referred to the neurosurgeon and had a transsphenoidal biopsy, which confirmed the prolactinoma. He was then discussed at the MDT with the endocrinologists. His initial prolactin was >300,000 mU/L, T4 12.5 pmol/L TSH 2.98 mU/L Cortisol 248 nmol/L Testosterone 13.5 nmol/L. He was started on Cabergoline 0.5mg per week, prolactin came down to 3000 mU/L with slight reduction in the size of the tumour. Unfortunately, despite perfect compliance his prolactin levels have risen and his tumour expanded. Prolactin levels rose to 21,000 mU/L, he has also complained of numbness in his face. His case was re-discussed, the consensus was little to be gained by debulking surgery. Cabergoline was gradually increased to 1.5mg/day, and he completed 6 weeks cycle of radiotherapy. His symptoms have resolved completely with further reduction in the size of the tumour, his prolactin came down to 4237 mU/L.

Conclusion:
Dopamine agonists are considered the gold standard of treatment in the majority of patients with prolactinomas. Only a small proportion of patients (10% in cabergoline-treated patients) do not respond successfully to dopamine agonists. Absence of prolactin control and of tumour shrinkage indicates resistance to dopamine agonists, which represents a challenging condition. Increasing dopamine agonist dosage and Radiotherapy are recommended as an alternative to surgery.