A rare case of ectopic prolactin secreting tumour

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Case history
A 27 year-old lady presented with eight weeks history of hot flushes, headaches, galactorrhoea and delayed periods. She denied any problems with vision or fluctuation in weight. She has past medical history of asthma, polycystic ovarian syndrome, irritable bowel disease and ano-vaginal fistula. At the time of presentation she took ferrous sulphate 200mgs and cetirizine 10mg OD. She is an ex-smoker and drinks alcohol occasionally. On examination she was noted to have galactorrhoea on expression. She had normal visual fields tested by confrontation method. Systemic examination revealed a 10 cm supra-pubic mass.

Investigations
Her initial prolactin level returned at 24,642 miu/l. Her LH and FSH were suppressed, but rest of her pituitary profile was satisfactory. Her oestrogen level was in the normal range. She couldn’t tolerate carbergoline hence stopped. Her repeat prolactin levels were 36,066 and 40,761 in subsequent weeks. She was commenced on Bromocriptine 2.5 mg. Her MRI brain revealed a normal pituitary gland. Her CT abdomen showed a large right adnexal mass with right retroperitoneal lymphadenopathy.

Results and treatment
She underwent an open laparotomy with right salpingo-oophorectomy with paraaortic node clearance. Her prolactin level 3 weeks post-operatively was <10miu/l and hence her Bromocriptine was stopped. Her subsequent prolactin levels two months post-operatively were normal at 367 and 81. Histology of the tumour, macroscopically demonstrated complex ovarian mass measuring 170x100x110 mm. Microscopically the ovary was replaced by diffuse sheets of undifferentiated, highly atypical cells possessing enlarged nuclei with abnormal variable chromatin and high mitotic rates without any differentiation. Her immunohistochemistry was reported as confusing and contradictory with positive markers for CD99, EMA, P53, Synaptophysin and WT1 indicating peripheral neuro ectodermal tumour (PNET) or Ewing’s sarcoma. Final diagnosis of small cell ovarian cancer was made after further gene testing refuted the possibility of PNET. Tumour staining for Prolactin was negative.

Conclusions and points for discussion
Ectopic prolactin secretion is a very rare phenomenon¹. Our case clearly demonstrates clinical and biochemical improvement of hyperprolactinaemia after tumour excision suggesting a possible ectopic prolactin secreting tumour. Depending on the pattern of differentiation, hormone secretion may be patchy which could explain the negative prolactin staining. The other possibility is raised prolactin due to paracrine effect by oestrogen on susceptible cell lines causing increased PRL gene expression, transcription and synthesis.²

¹W Hoffman, R Gala, K Kovacs and M Subramanian PHDt Ectopic prolactin secretion from a gonadoblastoma
²RA Maurer Estradiol regulates the transcription of the prolactin