

European Journal of Cancer, Vol. 33, No. 10, pp. 1709, 1997
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 Printed in Great Britain
 0959-8049/97 \$17.00+0.00

PII: S0959-8049(97)00199-8

An Unusual Case of a Renin-Producing Tumour of the Fallopian Tube

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RENIN-SECRETING TUMOURS are a very rare cause of secondary arterial hypertension. Most of these tumours are renal juxtaglomerular cell tumours [1]. Only a few extrarenal renin-secreting tumours have been reported [2-4].

We report a 33-year old Caucasian woman who presented in May, 1995, with a 3 week history of arterial hypertension and headache. She was otherwise well and there was no notable previous medical history.

On admission, her blood pressure was 220/140 mm Hg. Fundoscopic examination showed severe hypertensive retinopathy and physical examination was otherwise normal. A 24 h ambulatory blood pressure recording revealed a stable hypertension without the normal nocturnal fall in blood pressure, suggesting a secondary hypertension. A standard electrocardiogram, chest radiography and two-dimensional echocardiography were normal, corresponding to the short history of hypertension. Routine laboratory tests revealed hypokalemia (2.6 mmol/l) and a metabolic alkalosis (pH 7.55). Serum sodium, chloride, calcium, kidney and liver function tests and a blood count were in the normal range. Endocrine function tests revealed an elevated serum aldosterone (492 nG/l normal < 150) and an unexpected, excessive high serum renin level (> 18 000 pG/ml/h, normal range 120-2200 pG/ml/h). Serum thyroid-stimulating hormone (TSH), serum cortisol, 24 h urine-free cortisol, adrenaline and noradrenaline were in the normal range.

Renovascular hypertension was suspected, but a selective renal angiography was inconspicuous. CT scanning and abdominal ultrasound showed normal kidneys and adrenal glands, but incidentally a 13 × 7 cm large tumour in the pelvis emanating from the right fallopian tube.

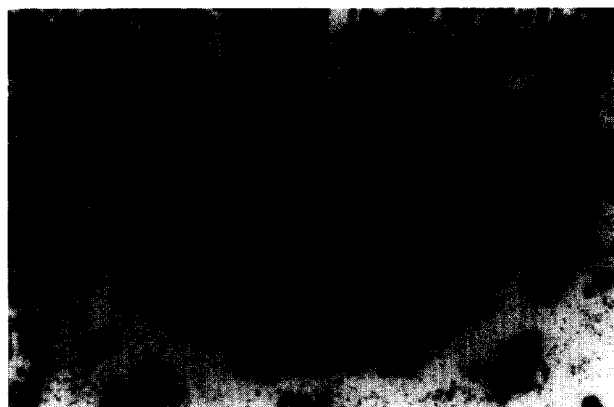


Figure 1. *In situ* hybridisation with the renin probe 1382-1g; 1382-2j shows strong positivity in some tumour cells (magnification × 400).

Pharmacological antihypertensive therapy with amlodipine 10 mg/d and doxazosin 12 mg/d was started with a 80 mmol potassium daily supplement. When blood pressure was normalised, the patient underwent exploratory laparotomy. The tumour was removed and histological examination revealed a well-differentiated adenocarcinoma of the right fallopian tube (FIGO IIIc). Immunohistochemistry showed weak positivity for renin (2D 12 antibody: monoclonal to human renin-weakly positive, R15: polyclonal to human renin: positive in granules) and negativity to prorenin (4C1: monoclonal to human prorenin). *In situ* hybridisation with a renin probe (a generous gift from F. Soubrier [1382-1g; 1382-2j]) was strongly positive in a minority of cells, corresponding well to a high level of circulating renin [5] (Figure 1).

After removing the tumour, the blood pressure returned to normal within a few days without specific therapy and serum potassium was in the normal range without substitution. Four weeks later serum aldosterone (101 nG/l) and renin (1334 pG/ml/h) also returned to physiological levels.

Renin-secreting tumours are a rare cause of secondary arterial hypertension, but oncologists should be aware of this paraneoplastic syndrome. Most of these tumours are renal juxtaglomerular cell tumours. Only a few extrarenal renin-secreting tumours have been reported and this is the second report of a renin-producing tumour of the fallopian tube. Additionally, in this case the diagnosis was confirmed by immunohistochemistry and *in situ* hybridisation. As in most cases, the diagnosis was evoked by a striking hyperreninaemia and secondary hyperaldosteronism without evidence of renovascular hypertension.

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Received 20 Mar. 1997; accepted 8 Apr. 1997.