

An unexpected cause of chronic back pain: A large Pheochromocytoma in a 55 year old woman

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Background

Lower back ache is a common complaint. In the absence of any red flag symptomatology (e.g. lower limb neurological signs) it is typically considered as benign and secondary to degenerative change.

There are only a few case reports of pheochromocytomas presenting with back pain as the primary symptom without reports of other more classic symptoms and signs such as hypertension, headache, palpitations and sweating (1).



Radiograph of Lumbar spine & sacroiliac spine showing calcification in left paravertebral region



MRI scan of adrenal glands demonstrates an 8.3 cm left adrenal mass with curvilinear calcification

Case

Here we present a case of a 55 year old woman with a past medical history of osteoarthritis who presented with chronic mechanical back pain that led to a referral to the local Rheumatology team. They reported normal clinical examination and a blood pressure of 120/70 mmHg at the time of assessment.

Lumbar sacral spine x-rays were requested and showed calcification in the left paravertebral region. Follow up CT and MRI scan showed a large 8.3 cm left adrenal mass with a cystic and hemorrhagic component. Interestingly the abnormality was visible on plain x-rays of the lumbar spine in 2009 and 2013 suggesting very slow growth rate.

24 hour urine collection showed a raised urine metadrenaline level of 22.07 $\mu\text{mol}/24\text{h}$ (<2.00) and a normetadrenaline level of 14.24 $\mu\text{mol}/24\text{hr}$ (<4.00). Following direct questions by the local endocrine team she did report longstanding symptoms of unprovoked episodes of anxiety.

The patient was subsequently referred to our tertiary centre (University Hospital of Wales, Cardiff) and she underwent attempted laparoscopic adrenalectomy after adequate alpha and beta blockade. Due to the size of the mass and the fact that it was invading the tail of the pancreas it was necessary to convert this to an open procedure.

Histology showed morphological features compatible with pheochromocytoma with invasion of pancreas but with complete local excision (R0). There was no evidence of metastasis.

Given that this was a large tumour and her young age genetic testing is being considered. There is a concern about either disease recurrence or metastasis. An MIBG scan and further 24 urine collection has been arranged for this reason and the results will be discussed at the next neuroendocrine tumour MDT review.

Conclusions

- Pheochromocytoma is a rare condition (2) that can present in a number of different ways (1) that can often be attributed to other more benign causes
- These tumors have been described as the “great mimic” (3) and “true imaging chameleons” (4), due to the way they may present
- To make a diagnosis in such situations both clinicians and radiologists need to have a high index of suspicion when faced with both typical and (as in our case) atypical signs and symptoms

References

1. Timmers, H.J., et al., Clinical presentations, biochemical phenotypes, and genotype-phenotype correlations in patients with succinate dehydrogenase subunit B-associated pheochromocytomas and paragangliomas. *J Clin Endocrinol Metab*, 2007. 92
2. Sutton MG, Sheps SG, Lie JT. Prevalence of clinically unsuspected pheochromocytoma. Review of a 50-year autopsy series. *Mayo Clin Proc* 1981. 56.
3. Lenders, J.W., et al., Pheochromocytoma. *Lancet*, 2005. 366(9486): p. 665-75.
4. Blake MA, Kalra MK, Maher MM, Sahani DV, Sweeney AT, Mueller PR, Hahn PF, Boland GW 2004 Pheochromocytoma: an imaging chameleon. *Radiographics* 24 Suppl 1:S87-99. (doi: <http://dx.doi.org/10.1148/rg.24si045506>).