Dear Sir,

I read with interest thc case report by Dr K E K Tan and colleagues on the 'Diagnostic Difficulties Associated with Phaeochromocytoma'[1]. In medical school, we were taught that phaeochromocytoma is a secondary cause of hypertension that must be excluded and that the 24-hour urinary VMA is the screening test of choice. That would be the answer we would give to the examiner if asked what we would exclude in a hypertensive patient. In the hospital medical outpatient department, we would almost always order that test when encountered with a hypertensive patient. Most would be the difficult to control ones as the controlled ones would bc managed at the primary care level. I must say that the pick-up rate was dismal. I have not picked up one. (I wonder if we could trace all the 24-hour urinary VMAs done by a laboratory over a period of time and see how many of the samples turn out positive.) There must be some other filter. The classical triad of headaches, palpitations and sweatiness mentioned in the article was a good starting point. As rightly mentioned, these are common complaints and we lose the specificity.

I was fortunate to have a patient who have had phaeochromocytoma and was operated upon which I could study and hopefully find that better filter. As a general practitioner, there was no access to 'hi-tech' investigations that was done and 'hi-touch' was out as the tumour was removed and the scar was the only significant physical finding, I resorted to 'hi-history', a sort of retrospective case study. I asked him, "What was the most remarkable change you felt after thc surgery?" I was quite startled by his reply. "Well, I used to get these bad dreams very often, dreams about falling down from heights. They stopped after the surgery." I was quite excited about this and was looking for an opportunity to gather more cases. There was none other (pre- or post-operative) since January 1995 after I first saw the patient. This was to be expected given the very low incidence. But I made it a point to ask all my difficult to control hypertensive patients about bad dreams (having bad dreams is also a common complaint but the specificity lies in dreams about falling down from heights). Nothing so far, no false positives, no proven false negatives. l wonder if it would be possible to gather all the patients who have had phaeochromocytoma and operated upon and ask them the same question. "What was the most remarkable change you felt after the surgery?" and more specifically, "Any bad dreams involving falling down from heights before the surgery?" Perhaps we may find a more specific filter. It may be worthwhile exploring the possibility of a physiopsychological basis for these dreams in patients with paroxysmal sympathetic discharges.

With regard to the recommendation that urinary metanephrines should replace urinary VMA as the screening test of choice, I agree that the $40 difference ($80 for metanephrines compared to $40 for VMA[2]) is definitely worth the sensitivity and specificity, given the same logistical hassle of collecting a 24-hour sample of urine. However, I wonder if the specificity of the VMA can be improved upon simply by raising the cut-off level above the recommended $\geqslant$ 64.4 micromol/day (11 mg/24 hour). We may compromise the sensitivity but it stands at 100% as it is. We should explore the possibility of pushing the cut-off level higher without compromising sensitivity yet improving specificity. From Fig 1 in the article, a level of 80 micromol/day can still maintain a sensitivity of 100% yet improving specificity.

The authors also recommended that all patients with any of the symptoms classically associated with phaeochromocytoma should be screened even if the patient is normotensive. However I would like to take up the issue of the commonalty of the symptoms leading to the problems of false alarm and false reassurance. For discussion purposes, 1et us take the prevalence of hypertension in Singaporeans aged 30-69 to be 13.6%[3] and 0.1% (the higher of 0.05% to 0.1% quoted in the article) of hypertension being caused by phaeochromocytoma. Excluding the cases in normotensive patients, we have a prevalence of phaeochromocytoma at 0.0136%. Taking the sensitivity of the classic triad of headaches, palpitations and sweatiness to be 90% and specificity to be 67% as quoted in the article, this will work out to a predictive value positive rate of 0.03708%, predictive value negative rate of 99.99796%, false alarm rate of 99.96292% and false reassurance rate of 0.00204%. In other words, the probability of anybody who is suffering from the classical triad having phaeochromocytoma is 0.03708% and we are talking about a false alarm rate of 99.96292%. The absence of the classical triad has a predictive value negative of 99.99796% with a false reassurance rate of 0.00204%. This means that we are almost certain of the absence of phaeochromocytoma in people without the classical triad. For those with the elassieal triad, we will be wrong 99.96292% of the time if we say that they may have the disease. This is what a sensitivity of 90% and specificity of 67% mean for this screening test for a disease with low prevalence that involves common symptoms.

However, we must not forget that the cure rate is 90%. It is a diagnosis worth picking-up. The challenge is to find that filter. I hope that someone with access to the patients can conduct further research on "bad dreams about falling from heights" in patients with phaeochromocytoma. The change in symptomatology from pre-operation to post-operation of the one case that I have is too dramatic to be ignored.

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