Lesson of the Week

Is paroxysmal thyroid swelling due to phaeochromocytoma a forgotten physical sign?

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Although acute thyroid swelling during paroxysms of hypertension due to phaeochromocytoma has been reported,^{1,2} we found no mention of it in current standard medical textbooks. We describe a case of adrenal phaeochromocytoma in which the only presenting symptom was paroxysmal neck swelling. Awareness of this association led to early diagnosis and successful surgical treatment.

Case report

A 46 year old lecturer presented in February 1982 with a year's history of intermittent neck swelling that would appear over a few minutes and last several hours and was associated with a full feeling in the throat. These episodes occurred with varying frequency of between four times in one week and once in three months. He denied any associated symptoms, though his wife stated that during these attacks he looked "drained and unwell." Initial examination showed no abnormality or enlargement of the thyroid (fig 1) and a normal blood pressure (120/80

FIG 1—Normal neck contour between attacks.

Intermittent neck swelling may be associated with phaeochromocytoma

mm Hg). Had he not shown a photograph of himself taken during an attack (fig 2) his story might not have been accepted.

Initial investigations, including full blood count and biochemical profile, thyroid function tests, laryngoscopy, computed tomography of the neck, and urinary metanephrine estimations

FIG 2—Obvious thyroid enlargement during attack.

all yielded normal results. He then attended during an attack and on examination was pale and sweating with a pronounced anterior neck swelling that felt typical of a goitre. Blood pressure estimations varied between 170/80 and 220/110 mm Hg. A repeat 24 hour urinary metanephrine estimation showed appreciably raised normetadrenaline excretion of 56.3 $\mu\text{mol}/24\text{ h}$ (10 292 $\mu\text{g}/24\text{ h}$) (normal range 1.1-3.2 $\mu\text{mol}/24\text{ h}$ (204-585 $\mu\text{g}/24\text{ h}$)) and slightly raised metadrenaline excretion of 5.9 $\mu\text{mol}/24\text{ h}$ (1147 $\mu\text{g}/24\text{ h}$) (normal range 0.9-2.7 $\mu\text{mol}/24\text{ h}$ (175-525 $\mu\text{g}/24\text{ h}$)). A computed tomographic scan of the abdomen showed a right adrenal mass. After preparation with labetalol laparotomy was performed and a 162 g right adrenal tumour excised. Histological examination showed a benign phaeochromocytoma. His postoperative course was uneventful, and he remained well 12 months later, being normotensive with no further neck swelling.

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Comment

Phaeochromocytoma is a rare but potentially curable cause of hypertension. It may mimic a variety of diseases, and the diagnosis relies on clinical suspicion leading to specific investigations. The earliest report of acute thyroid swelling associated with a phaeochromocytoma was in 1938,¹ though the diagnosis of an adrenal chromaffin tumour was made only at necropsy. In 1947 Bauer and Belt described paroxysmal hypertension with concomitant thyroid swelling due to phaeochromocytoma of the right adrenal, which was cured by adrenalectomy.² Further evidence came from an experimental study on the action of noradrenaline in man, when thyroid swelling was observed in two volunteers given intravenous infusions of 30 mg synthetic 1-noradrenaline/min, though no swelling was seen with infusions of adrenaline.³ It seems that phaeochromocytomas secreting predominantly noradrenaline could cause thyroid swelling as in this patient. How this is mediated is not clear, though Rein *et al* reported in 1932 that thyroid blood flow is reduced when the carotid sinus nerve is cut and is greatly increased when the nerve is stimulated.⁴ It has been postulated² that a sudden rise in blood pressure due to inappropriate release of noradrenaline might increase thyroid blood flow via the carotid sinus nerve, producing a visible or palpable thyroid swelling.

One of us had previously seen a 58 year old man with a right adrenal phaeochromocytoma whose symptoms included inter-

mittent headache, palpitations, and neck swelling, all of which resolved after the adrenal tumour was removed. This experience prompted an early suspicion of a phaeochromocytoma in the case reported here, leading to early diagnosis and surgical cure. We think that any patient with a history of intermittent neck swelling should be carefully assessed for the presence of a phaeochromocytoma.

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References

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Reading for Pleasure

The second fifteen

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Firstly, a word in explanation of my title. This is the second paper that I have written in this series, and it represents my more youthful taste. It does not reflect on the authors.

G A Henty was one of the authors whom I read most avidly as a boy. Nowadays he is enjoying something of a vogue on the BBC and in the papers. If we are to believe them Henty's historical settings were accurate but his characters were rather wooden. I was quite unaware of this and read every Henty that I could get hold of with the utmost pleasure. All his books followed a similar pattern—the hero was an officer or at least of officer material and took part in the principal battles of the campaign that the author was dealing with. Needless to say he survived every danger to the end. This may have given a rather erroneous view of the hazards of a military life. Nevertheless, I owe Henty an immense debt for awakening my interest in military history. In particular, I recall *With Lee in Virginia*, which gave me a lifelong liking for the American civil war.

Naturally enough school stories formed a large part of what I read. Talbot Baines Read is an author who wrote what is probably the finest school story ever penned, *The Fifth Form at St Dominics*. It has set the pattern of school stories ever since it first appeared 100 years ago. It deals with life in an English public school in Victorian times: a splendid set of characters ranging from fags to sixth formers take part in a series of adventures ranging over the whole spectrum of school activities—classwork, games, scholarships, etc. It is still in print and I have reread it several times with enjoyment.

And now I come to what is frankly a cry for help. Can any reader lend me a copy of *Mobsley's Mohicans*? I read this school story 60 years ago and have been looking for a copy ever since without success. It is (I think) by Harold Avery and deals with the adventures of Mobsley and his friends at an English boarding school, culminating in a fight with a burglar. My memories of this book, even after 60 years, are vivid, and it deserves to be reprinted.

I have often noticed that I tend to prefer the earlier works of an author. One author who well illustrates this is Rider Haggard. I have read almost all his books, but none has given me as much pleasure as *King Solomon's Mines*. The writer recounts the adventures of a small party of Englishmen in pursuit of treasure in Africa. I shall not say more lest I spoil it for those who may not have read it. I have reread it many times and it still retains its freshness and excitement.

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