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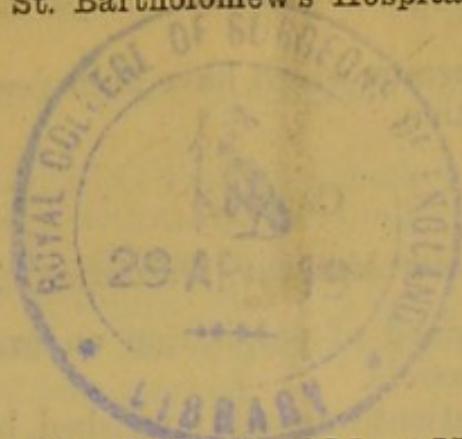
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21.

MIMIC OR PHANTOM ANEURYSMS.

BY

SAMUEL WEST, M.B.

My attention was directed to this affection by the case of a man who came as a patient to this Hospital, making complaint of indefinite aches and pains. On examining his chest, I noticed under the outer half of the left clavicle an oval pulsating tumour, above which the veins were dilated, and in which a thrill was felt and a murmur audible. The tumour was of the size of a small hen's egg, though not quite so prominent as this might imply. The patient's chest was examined both before and after me by two students, both of whom reported nothing wrong; and on proceeding to demonstrate what I believed to be an axillary aneurysm, I was surprised to find the tumour with the thrill and murmur gone. The patient was allowed to rest quietly for some minutes, and was then again examined. All the physical signs returned, tumour, dilated veins, thrill, and murmur; but while under observation the tumour gradually subsided and the other physical signs decreased, until in two or three minutes all had disappeared. The experiment was repeated several times with equal success. The physical signs were, it was found, in no way affected by position of the arms, although repeated movements of the arms quickly reproduced them; but so also did any movement, even walking with the arms hanging by the side. The signs were clearly those of temporary dilatation of the axillary artery, and the case might be described as one of mimic or phantom aneurysm.

Since observing this case, I have met with several others. They are not, I believe, very rare, and probably many of the

cases of subclavian murmur which have been described are really instances of this affection.

CASE I.

Pain, Pulsation, Murmur, Dilatation of Veins.

Female, 37, complained of palpitation on exertion and slight pain under the left clavicle.

March 25.—The patient was well nourished, but not muscular. Under the outer half of the left clavicle was found a pulsating swelling and over it a loud systolic murmur, increased on pressure, but not depending in any way on the position of the arm, with slight dilatation of the superficial veins on that side of the chest. The murmur subsided and the other physical signs disappeared if the patient were allowed to remain quiet for a time, though they returned quickly on excitement or on moving arms. The patient had noticed this herself, and said that the same occurred also on the right side, but on that side I myself saw nothing.

May 3.—The patient was examined again, and the same phenomena observed.

CASE II.

Tumour, Pulsation, Murmur, and Pain.

Policeman, 35, complained of palpitation and occasional pain in the left side, which was worse when in uniform. The patient was a moderately muscular man. Under the outer half of both clavicles was a slight swelling, most marked on the left side, increased on exertion, especially after use of the arms, but independent of the position of the arms. Impulse was felt in it, and a loud systolic murmur heard over it. As the circulation became quiet, all these physical signs disappeared, but were easily reproduced both by exertion and excitement. The heart was slightly hypertrophied.

A month later the same physical signs were present. The patient was better, though he still complained of palpitation of the heart, and of coldness and pain at times in the left shoulder.

CASE III.

Tumour, Pulsation, Thrill, Murmur.

S. C., 46, an ironfounder, a very muscular man, who worked at times with a sledge hammer.

He complained of slight dyspepsia. Was not a nervous or excitable man.

Under the outer half of the left clavicle was a swelling as large as a small hen's egg, with thrill and loud systolic murmur. This came and went, being produced by any excitement and occasionally by muscular movement, but was not due in any way to the position of the arms. The same physical signs were noticed on the right side, but less marked.

CASE IV.

Tumour, Pulsation, Thrill, and Murmur.

A. T., 29, male, boot riveter, hammering all day with a 4-lb. hammer. A muscular man. Complained of pain under the right clavicle and in the right shoulder, and occasionally of feeling "a roaring," brought on by he knows not what, but not always by work. No cardiac palpitation. A passionate but not a nervous man.

Under both clavicles (outer halves) a swelling with pulsation and systolic thrill, and a loud rasping systolic murmur, increased on pressure, which disappeared if the patient remained quiet for a time, reappeared quickly on excitement, especially after movement of the arms, but was not due in any way to the position of the arms. No other physical signs.

CASE V.

Tumour, Pulsation, Thrill, Murmur, Amyotrophy.

W. N., 38, male, came complaining of loss of power in left arm and leg, and was found to have wasting on the left side of some of the scapular muscles, notably the infra-spinatus, and of some of the gluteal muscles, chiefly the gluteus maximus. In these regions he suffered from neuralgic pain. The cause of the wasting was obscure. The patient was not muscular, and was not accustomed to very heavy work.

Over the left deltoid and pectoral region were enlarged superficial veins, while there was a pulsating swelling under the outer half of left clavicle, with a thrill and a systolic murmur, the latter increased on pressure. The same symptom, though to a much less degree, on the right side. On both sides the murmur, thrill, and pulsation appear and disappear according to excitement and movement.

CASE VI.

Tumour, Pulsation, Murmur, Dilated Veins, Difference in Pulses.

W. M., clerk, 39, came complaining of debility of six weeks' duration.

Some diffuse fulness under the outer half of the right clavicle, though no distinct tumour, and over this a loud systolic squeak, increased on pressure, but audible without any pressure; affected by position; loudest when the right hand was holding up the trousers, and almost absent when the arm hung down; but in a few seconds all this disappeared, and the murmur could not be reproduced either by position or pressure.

The superficial veins were dilated on both sides of the chest. The slightest excitement brought back the symptoms afresh. On examination some weeks later, the symptoms were still present, and it was noticed that the right pulse was smaller than the left, though this difference might have been physiological.

CASE VII.

Tumour, Pulsation, Thrill, Murmur.

A. R., male, 20, a weakly, feeble man, came complaining of cough, and was found to have emphysema of the lungs. Under the one half of the left clavicle was a swelling, with visible pulsation and systolic murmur, which disappeared in a few minutes while under observation, though easily reproduced. The patient complained of palpitation of the heart when excited, and of being very nervous.

A month later the signs noted were: swelling as before; dilated veins at lower part of neck, and thrill; systolic blowing murmur; forcible thumping pulsation,—all subsiding as patient became quiet. Nothing similar on the right side. Systolic murmur audible above the clavicle, and faintly at the aortic cartilage.

Three months later, the same phenomena noted, except the dilatation of the veins. After subsidence they could be reproduced at pleasure.

I have seen this patient several times since, and have always observed the same phenomena, though not always in the same degree.

SYNOPSIS OF CASES.

	Sex.	Age.	Symptoms.	Physical Signs.
1	F.	37	Palpitation of heart, with pain under clavicle.	Tumour on left side. Systolic murmur. Dilated veins.
2	M.	35	Palpitation of heart, with pain and coldness under clavicle.	Tumour on both sides, most on left. Systolic murmur.
3	M.	46	Dyspepsia.	Tumour on both sides, most on left. Systolic murmur. Thrill.
4	M.	29	Pain and "roaring" under clavicle.	Tumour, equal on both sides. Systolic murmur. Thrill.
5	M.	38	Pain associated with amyotrophy, and due probably to spinal lesion.	Tumour on both sides, most on left. Systolic murmur. Thrill. Dilated veins.
6	M.	39	Debility.	Tumour on right side. Systolic murmur. Thrill. Dilated veins. A difference in the pulses.
7	M.	20	Palpitation of heart.	Tumour on left side. Systolic murmur. Thrill. Dilated veins.
8	M.	?35 ¹	General aches and pains.	Tumour on left side. Systolic murmur. Thrill. Dilated veins.

Of these eight cases, seven were males, and, with the exception of one, all in the middle period of life. They all came to the Hospital complaining of symptoms of debility or nervousness, and, in four of the cases, of discomfort in the subclavian region. Though two were muscular men, the other cases were not so, and some of them decidedly weak and ill developed.

The swelling was unilateral in half the cases, and in the other half more marked on one side than the other. A murmur occurred in all, and a thrill was noted in six. Dilated veins on the affected side in five, and in one a difference in the pulses.

In all, the physical signs were of temporary duration, though easily reproduced by any excitement, and in nearly all were unaffected by position.

The name of mimic aneurysm was given ² by Sir James Paget in the article upon neuromimesis in his "Clinical Lectures" to the similar affection of the abdominal aorta, familiar under the name of pulsating aorta or abdominal pulsation. This has been long known (it is noticed by Hippocrates³), and has been often described; but in other vessels, with the exception of a brief account by Laennec,⁴ and of the short reference by Sir

¹ The original case described at the commencement of this paper (p. 119).

² Aneurysme bâlard, Morgagni.

³ Hippocrates, ed. Littré, v. 369.

⁴ Traite d'Auscultation, ii. 1765.

James Paget,¹ and a similar reference by Dr. Walshe,² this affection has been, I believe, hitherto undescribed.

In the abdominal aorta, the name of mimic aneurysm is fully justified, for Sir J. Paget remarks that all the cases of abdominal pulsation which came under his observation had been diagnosed as aneurysm; and this is a matter of common experience.

The points upon which the diagnosis between these two classes of cases rest are thus stated by him:³ "The artery feels full and wide, but soft and compressible, or even, if one may so call it, puffy, without any of the hardness or stiffness felt in aneurysm. The pulsation is full, but rather soft, like that of an artery in the reaction after large loss of blood; and what is chiefly characteristic of the absence of dilatation or aneurysm, the extra-full pulsation is only in one direction. There is no unusual lateral dilatation. The too-much throb is only forwards. There are no paroxysms of pain, and no growth in size. In the abdominal aorta there is no considerable dilatation. It is as if the arterial walls were thin, and had too little muscular resistance." In two cases to which he refers, in which post-mortems were made, no change beyond general thinness was found in the coats of the vessels.

In the cases I have just described many of these diagnostic points fail. The dilatation in both directions, transverse and longitudinal, the pulsation, thrill, and murmur, are all signs of true aneurysm; and so close may the resemblance often be in marked cases, that diagnosis would be difficult except for the one additional and differential fact of their temporary character.

The causes of this affection are obscure. The permanent dilatation is usually, although not always, connected with change in the coats of the vessel, and although one of the causes of aneurysm given by authors is paralysis of the vaso-motor nerves, there is, I believe, but little satisfactory clinical proof of this. Local muscular weakness alone will not explain these cases of mimic aneurysm. The true explanation must be sought in innervation disturbance,—a disturbance in which, whether primarily or secondarily, the sympathetic is at fault. The sympathetic might produce the required result by exciting contraction of the peripheral portion of the affected vessel, this being followed by secondary mechanical dilatation immediately above the

¹ Paget, Clinical Lectures. This mimicry is most frequent in the abdominal aorta, in which it has been often described as a nervous abdominal pulsation; but, so far as I know, it is not described as occurring in the subclavian, innominate, and carotid arteries, though in these it is not very rare, and sometimes is not easy of diagnosis.

² "Diseases of the Heart," article on Pulsating Aorta.

³ Paget, *ut supra*.

constricted part. But only in one case was any difference in pulse noted, and this might have been physiological. It is therefore more probable that the dilatation is a primary local lesion, due either to irritation of the vaso-dilator or to inhibition of the vaso-constrictor fibres. The existence of vaso-dilator fibres is still uncertain, so that what we have probably to do with in this affection is a paroxysmal inhibition of the vaso-constrictor fibres. And we may not inaptly compare the temporary dilatation of the axillary with the temporary dilatation of the small vessels of the skin, with which we are so familiar in blushing.

The analogous physiological process is to be found in the so-called rhythmical contraction or dilatation of arteries, observed first by Schiff in the rabbit's ear, later by V. Riegel¹ in the saphena vein and in the mesenteric arteries, and by Gunning and Savrotti² in the web of the frog's foot. It has been described as occurring occasionally in the veins³ and also in the lymphatics of the guinea-pig.⁴

The rhythmical contraction is irregular in its periods and duration. Schiff noticed it from two to eight times in the minute. By others the contraction has been found to last longer—from one to even ten minutes. It is independent of changes in the external temperature, of the heart's action, and of respiration. It is greatly affected by sensorial and psychical stimuli, and these reach the vessel through the sympathetic trunk, for section of these nerves stops the rhythmical movements. Schiff concluded from this that the source of these movements was situated in the nerve centres, but it has been shown since, that this cessation is only temporary, and that the movements return in a short time (a day or so) after the operation. This fact led Huizinga⁵ to believe that they depended upon local centres, probably the sympathetic plexus in the vessel walls.

Rhythmical contraction has, it is stated, never been observed in the large arteries, and, so far as I know, nothing similar has been described in man.

The part which the sympathetic plays in disease is a subject of great and increasing interest. From the simple blush to the nervous palpitation of the heart may be traced, I believe, a continuous chain of analogous phenomena.

The ordinary blush, the flushing of dyspepsia and meningitis,

¹ Archiv. f. d. ges. Physiol., iv. 356; Vulpian, Leçons sur l'Appareil Vasomoteur.

² Utrecht, 1857.

³ V. Riegel, *ut supra*.

⁴ Heller, Verh. d. phys.-med. Soc. zu Erlangen, 1870, Heft 2.

⁵ Archiv. f. d. ges. Physiol., xi. 207.

the erythema of neuralgia and the hectic of fever, are instances of sympathetic vaso-paralysis affecting limited areas of small vessels. The hyperæmic stage of inflammation, in which not only are the small arteries and capillaries of the affected part dilated, but also the large vessels going to it, supplies the link which connects these affections with the large and multiform group of inflammatory diseases. In glycosuria and polyuria a more extensive vaso-paralysis occurs, in which a whole system of vessels is concerned, the hepatic in one case, and the renal probably in the other. Mimic aneurysm and abdominal pulsation are instances of the same vaso-paralysis, but one which is limited to large vessels or parts of them, while those palpitations of the heart which are accompanied, as is often the case, by dilatation, form the last link in the long chain. Between the glycosurian group, in which the whole system of vessels is affected, and the last two groups of mimic aneurysm and nervous palpitation of the heart, the gap is filled by that more extensive and complicated sympathetic neurosis, exophthalmic goitre, in which disease not only is a system of vessels affected (the thyroid and probably also the retro-bulbar), but also the larger vessels, and the heart. In goitre, however, important as the part is which vaso-paralysis plays, we have a curious entangling of vaso-paralytic and vaso-spastic phenomena, which our present knowledge of the sympathetic system does not permit us to unravel.

The series of cases under consideration may be completed by adding those instances of dilatation of the abdominal vein, which constitutes probably the pathology of fainting and shock.

It would be interesting to consider how far temporary vaso-paralysis might explain certain obscure neuroses, such as hemiplegia, angina pectoris, convulsions, epileptic and hysterical fits, and what part it might play in many other affections; but such an inquiry would be beyond the limits of the present paper.