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Hospital Reports.

CITY DISPENSARY.

CASE OF A PERSISTENT MURMUR IN THE PULMONARY ARTERY.

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THE physical signs of abnormal conditions of the pulmonary artery, as laid down in our text-books, are avowedly those rather of a speculative than of a clinical character. Until within a very recent period, we vainly sought in the pages of our literature for the auscultatory phenomena of cases accurately observed during life. This has resulted rather from the comparative rarity of the cases than any inherent difficulty in their physical investigation. It is not, however, unreasonable to expect, now that the differential diagnosis of the valvular diseases of the heart is so much simplified, that the occurrence of murmur in the pulmonary artery may not eventually prove so unusually rare as was at one time imagined; since it is certain that very many cases of disease of this vessel, revealed by *post mortem* examination, are found in the writings of the most approved writers, both of an earlier and more recent date.

In addition to the valuable communications of Dr. Chevers, we learn that, in an analysis of 100 cases by the late Dr. Clendinning, valvular disease was found sixteen times more frequent upon the left than the right side of the heart. Bizot found, in 157 cases, 9 of disease of the pulmonary artery. Blakiston noted disease of the valves of the pulmonary artery five times in 156 cases. Peacock, in 41 cases of defective development of the valves of the right and left ostia, found 32 occurring in the aorta, and 9 in the pulmonary artery. Swett, in an analysis of 48 cases, found 3 cases of disease of the pulmonary valves. Lastly, Bamberger (Virchow's *Archiv*, 9tes Band, 4tes Heft), in 52 autopsies, found 2 of simple disease of the valves of the pulmonary artery occurring in youths between the ages of 10 and 20 years. Well marked cases of such disease, diagnosed during life, have now been recorded by Hope, Elliotson, Bouillaud, Ormerod, Hamernik, Frerichs, Benedikt, Dietl, etc.

The case I now venture to publish at least fulfils all the theoretic requirements for pulmonary arterial murmur. It has been constantly under my own observation and that of several excellent observers, for a period of six months, without the slightest variation with respect to the physical signs; and, as the patient still enjoys an average amount of health, there is no reason to delay the physical history of the case, although the anatomical proof be absent. I may add, moreover, that Dr. Sibson has recently examined this case, and concurs in the description of the physical signs.

CASE. Emma Baker, aged 19 years, of sedentary occupation, was admitted a patient of the City Dispensary, February 4th, 1856. She complains of headache after dinner, pain over the lower sternal region, passing through the chest to the blade bone; disposition to faintness, with occasional complete loss of consciousness. She has suffered from dyspnoea as long as she can remember; frequently re-

curring catarrh, characterised by cough and very considerable expectoration of thick phlegm. Under mental excitement, the ordinary tint of her face becomes deeper, and her lips turn quite black. The face and eyelids appear puffy in the morning; swelling is also observed about the calves of the legs. The kidneys act healthily. Menstruation is tolerably regular. The appetite is good; sleep undisturbed. Her parents are both living, and, with her brothers and sisters, healthy. She has never had rheumatic fever, or any inflammation within the chest.

Inspection. Her face is round and full, and of dusky tint; the lips are blue, conveying the expression of "*facies cardiaca*" in an early stage. There is no abnormal pulsation of arteries, or cervical venous distension. The mammae are large. The finger nails are blue, but the ends of the fingers are natural with respect to shape and temperature. The feet are swollen, and covered with large varicose veins the size of the little finger. The chest and spine are perfectly normal in shape. General nutrition is perfect. She is of the average height and strength. Respirations 20 per minute.

Palpation. Slight but well marked systolic *frémissement*, from the second to the fourth costal cartilages of the left side, occupying an area vertically of two and a half, and transversely of three inches, is perceived. The maximum site of *frémissement* is between the second and third left cartilages; it extends to that portion of the sternum corresponding to the cartilages named, and is then lost. It also ceases to be felt to the left, after occupying the area named. Not the slightest *frémissement* is appreciable to the right of the sternum, nor even upon the left side below the site indicated. The apex of the heart is not exactly *in situ*, rather inclining to the left of the nipple line, between the fifth and sixth ribs. The impulse is perfectly normal. Not the slightest *frémissement* exists here, or in the carotids. In the episternal notch, slight pulsation is felt. There is no epigastric impulse. The pulse is quite soft, regular, and equal in both wrists, but permanently above the average frequency, generally 96 per minute. Not the slightest pulsation exists over the area of thrill.

Percussion. The percussion sound is uniformly clear over the lungs, as also over the whole sternal region. No enlargement either of the right or left cavities of the heart is indicated by percussion; but the result may be modified by the large size of the mammae.

Auscultation. Between the second and third left costal cartilages, the normal first and second sounds are entirely replaced by one extremely superficial, soft, though very loud and almost continuous systolic *bruit*, gradually attaining its maximum of intensity, and then gradually decreasing, exactly imitated by the *bruit de diable*. There is a slight intermission at what should be the end of the long interval of silence, or the murmur would be absolutely continuous. The maximum intensity of the murmur is at the lower border of the second left costal cartilage, one inch distant from the left border of the sternum. The murmur is comparatively distant and slighter during deep inspiration, but becomes again exceedingly loud and blowing into the ear during forced expiration. It is transmitted, though with greatly diminished intensity, to the root of the pulmonary artery and body of the right ventricle. In the epigastrium, both normal sounds are audible, though still mingled with distant murmur. At the left anterior surface, all *bruit* ceases, almost abruptly, below the fourth cartilage; and now the second sound begins to be audible. At the left apex, both sounds are perfectly normal, with reference alike to rhythm and timbre. Not the faintest murmur is

heard here. The impulse also is perfectly natural. Upon the right side of the chest, both sounds are distinctly heard, the first being accompanied by distant *bruit*; the second very distinct and clear, which character extends nearly to the left edge of the sternum. At the episternal notch, and over the carotids, the second sound is also particularly distinct, and the first sound unmixed with murmur. Posteriorly, about the superior border of the scapulae, distant *bruit* appears audible at intervals, especially during deep expiration. Over the remaining portion of the chest, faint though normal *tic-tac* can be heard. Both *frémissement* and murmur become considerably intensified upon movement. No jugular venous murmur is audible. The respiratory murmur is tolerably pure, but apparently louder over the left side.

From the period of her admission to the present date, the physical signs have undergone no change. Her constitutional condition has undergone some modification. She has exhibited considerable variation with respect to the semi-cyanotic tint; has once had hæmoptysis, and, some months subsequently, considerable anasarca of the lower extremities.

REMARKS. The weight of proof resting upon me, it may perhaps fairly be required that I should state the reasons why this case should be regarded as an affection of the pulmonary rather than of the systemic artery, since an error in diagnosis might so readily be made, more especially when it is remembered that Hope, and, more recently, Bamberger, have related cases of aneurism of the concavity of the arch of the aorta, which, by pressing upon the pulmonary artery, engendered a loud and harsh systolic murmur immediately over the anatomical site of this vessel. The undermentioned points would appear to me to constitute the principal arguments against the existence of aortic aneurism or other disease.

1. The general history of the case, which testifies to the existence of more or less dyspnoea, lividity of lips, etc., as long as the patient can remember.

2. The age and sex of the patient. Aortic aneurism is comparatively rare in women. Of 189 cases analysed by Bizot, 171 occurred in males, and only 18 in females. The mean age, also, of aortic aneurism, is, according to the statistics of the best observers, between 30 and 40. This patient is under 20 years of age.

3. The entire apparent integrity of the aortic system, as evidenced by percussion and auscultation, and the absence of any well marked collateral sign characteristic of aortic disease.

4. The absence of the ordinary causes of disease of the heart at this period of life, rheumatic fever, thoracic inflammation, etc.

5. The difficulty of conceiving any other extrinsic cause of displacement of the aorta, without attendant physical signs. And even the rare occurrence of transposition of vessels would fail to explain a systolic murmur. Skoda has stated that, in some cases of mitral disease, a murmur is heard over the pulmonary artery. The same proposition may be enunciated with respect to disease of the aortic valves. Nothing is more common in insufficiency of these structures than for murmur to be heard over the pulmonic cartilage, covering more or less completely the normal sound of closure*—a clinical fact which finds a ready explanation in the circumstance that, from superposition, vibrations are readily transmitted from a defective aortic orifice along the course of the pulmonary artery; and it is matter of astonishment to me that authors have affirmed the differential diagnosis of diseased aortic valves, on the more than doubtful premiss, that the clear sound of closure of the pulmonic valves is still audible at the pulmonic cartilage.

Assuming, then, the evidence adduced sufficient to negative the hypothesis of aortic aneurism, etc., and the murmur to be actually generated at the pulmonic artery, the question yet remains open, whether the murmur be caused by some alteration of the surrounding tissues, or

some inherent condition of the vessel itself; that is, whether the proximate cause be of an extrinsic or intrinsic nature. On the first supposition, could tuberculous infiltration at the anterior edge of the lung, or cartilaginous growth within the pericardium, as observed by Elliotson, engender murmur by pressure upon the trunk of the artery? If tubercle, an isolated mass might have been formed in the precise situation, and, subsequently, by the venosity of the blood induced by pressure upon the artery, the further progress of tuberculosis prevented, in conformity with Rokitsky's theory of antagonism.

Is there a probability of its being caused by aneurism of the pulmonary artery? In deciding upon this question, we cannot, as in the case of aortic disease, adduce the negative testimony of age and sex; since, according to Walshe, aneurism of the pulmonary artery has been observed in girls under twenty years of age. Indeed, Blakiston records a most instructive case in point. Against this view may be stated—

1. The absence of any appreciable disease of the aorta, with which, according to Rokitsky, aneurism of the pulmonary artery is almost invariably associated.

2. The absence of pulsation and percussion dullness.

3. The general history and progress of the case.

Finally, may the murmur owe its origin to some congenital cause—patency of the ductus arteriosus, open *foramen ovale*, with imperfection of the *ostium* of the pulmonary artery? In a very large number of cases analysed by Gintrac, Louis, and Bouillaud, this double imperfection was found to exist; indeed, so constant was the sequence, that Louis, in reviewing the varieties of structure of stenoses of the pulmonary artery, arrives at this conclusion:—"Il semblerait donc résulter de tout ce qui précède que le trou de Botal, à une époque quelconque de la vie, la perforation de la cloison des ventricules et le rétrécissement de l'artère pulmonaire, doivent être considérés comme des dispositions congénitales."

I believe, upon consideration, that this latter mode of origin, or some modification of it, will prove the correct one. This opinion is supported by the *commemoratifs* of the case; the more or less habitual dyspnoea; the recurring bronchial irritation; the semi-cyanotic tint of face and nails, varying in intensity from time to time; the changeless character of the physical signs, and, with slight exception, of the constitutional phenomena.

One other point in this case is deserving of comment; viz., the apparent absence of any marked structural change of the right chambers of the heart. The absence of such change may possibly be explained upon the assumption of a patent condition of the ductus arteriosus. Upon reference to Gintrac (*Observations et Recherches sur la Cyanose*, 1824), it will be found that, in cases 4, 9, 13, 19, 22, 25, the duct was open; and no mention is made of the enlargement indicated, which is specially pointed out in some others of the series.

Hospital Gleanings.

ANOMALOUS CONDITION OF THE NERVES OF THE SHOULDER-JOINT: LOCAL ANÆSTHESIA BY CHLOROFORM.

Two cases, not very striking in themselves, but eminently practical, and bearing at first sight some resemblance to each other, have occurred during the week. One patient was affected with what seems paralysis of the shoulder, or paralytic inability to lift the arm in the least—a condition quite ruinous to him as a labourer, as he cannot exert himself in any business. He suffered, according to the history of the case, some slight injury of the joint a long time ago, requiring him to lie in bed; but that had all gone, leaving this paralysis. Mr. WORMALD, under whose care he now is, conceived that there was a paralysed condition of the musculo-spiral or circumflex nerve, the largest branches of the brachial plexus. The former winds round the shaft of

* I believe this to be invariably true with regard to musical diastolic murmur, and most frequently so with regard to ordinary *souffle*, when at all intense.