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CASE OF ANOMALOUS CARDIAC MURMUR, CONCURRING WITH FATAL CEREBRAL DISEASE.

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The following case was incidentally referred to in a discussion on the subject of the murmur (so-called) of mitral stenosis, arising out of a communication by Dr. McVail to the Medico-Chirurgical Society of Glasgow, on 1st April, 1887. I then stated that it was the only instance occurring in my experience for a long series of years, which admitted at all of being construed as bearing in the direction of the late Dr. Austin Flint's theory as to the pre-systolic (auricular-systolic) murmur.[1] From this point of view, without dwelling on the case at the time, I was led to remark upon the infrequency of these apparent exceptions (even admitting them to exist) to the more current view which associates the pre-systolic, or auricular-systolic (A. S.), murmur with contraction or obstruction of one or other of the auriculo-ventricular orifices; and I also pointed out that Dr. Flint's theory does not, even if we suppose it to be established, afford any support at all to the view which professes to account for the pre-systolic (or A. S.) murmur as one of regurgitation; while on the other hand it confirms by comprehending or including the current theory, inasmuch as Dr. Flint did affirm, and believed himself to have proved, that extreme regurgitation at the aortic orifice may (though very rarely and occasionally) determine obstruction at the mitral orifice of a functional character, and therefore not demonstrable after death.

I should greatly desire that the readers of the present communication would associate it with the discussion now referred to, giving my views on the subject in a discursive fashion (*Glasgow Medical Journal*, September, 1887, pp. 224–229); or with the subsequent and much more elaborate statements and counter-statements which followed Dr. Dickinson's well-known reproduction of the regurgitation theory of the A. S. murmur. (*Lancet*, of successive weeks, from October 1 to November 19, 1887).

The importance I attached to the present case was not very great, being limited, in my judgment, both by the brief period of observation,

[1] American Journal of the Medical Sciences, January, 1886.

and by some degree of uncertainty as to the facts. I was, therefore, at first disposed to regard the merely casual mention of the case as enough for practical purposes, especially as I afterward demonstrated the post-mortem appearances at a later meeting of the Medico-Chirurgical Society, and then placed the parts for reference in the Museum of the Western Infirmary at Glasgow. When Dr. Bramwell, however, made his communication to the AMERICAN JOURNAL for March, 1888, of a case observed in October, 1886, I placed the MS. of my own case in his hands, exactly as it was given to the Society, for publication if he should think it worth while; and it is only in consequence of this MS. having been mislaid (after being returned by him to me, with the expression of a wish that it should be published) that it has been held over till now.

Henry T., æt. twenty-four, admitted to Western Infirmary (Ward I) on 8th March, 1887, and died on 22d March; his symptoms being mainly cerebral, and such as to raise questions of possible surgical interference, as for abscess connected with disease of the middle ear. From this point of view the case has already been fully recorded in the *Glasgow Medical Journal* for October, 1887,[1] and it was there indicated that certain cardiac phenomena, detected very shortly before death, and in no way obviously connected with the cerebral aspects of the case, were passed over in order to avoid undue prolixity. These phenomena will now receive attention, with only so much of reference to the history as may be supposed to be even remotely connected with the lesion of the valves discovered after death.

The patient was a seaman, and was known to have led a very dissipated life, landing him in what seemed closely to resemble symptoms of delirium tremens shortly before admission. On admission, he was found to be affected with some kind of condensation over the left lower pulmonary lobe, with acute symptoms and friction sound. A suspicion was entertained of pericarditis associated with pleurisy of the left side, as will appear from the following note of March 11th: "Cardiac sounds free from murmur, but at the apex beat in the fifth interspace and a little above this, there is a double rub heard, suggestive of probable pericardial friction." After this, he passed into apparent convalescence and was able for some days to be up and to give a good deal of assistance in the ward, when cerebral symptoms suddenly rose into prominence and assumed a degree of importance which only ceased with his death.

It is not on record that any detailed examination of the heart took place between the 11th and the 17th of March, but at this date Dr. Gairdner personally made an observation, with a view to the important questions of diagnosis and prognosis emerging from the cerebral symptoms—not on account of any new thoracic manifestation. The result of this examination, so far as the heart is concerned, is included in the following notes, made the day before death: "A cardiac phenomenon noticed for the first time by Dr. Dunlop yesterday morning (March 20th), is considered by Dr. Gairdner as of doubtful interpretation, owing to the suspicion entertained of pericarditis at an earlier stage. The facts

[1] Three Cases of Brain and Ear Disease, considered with reference to Diagnosis and also to questions of Brain Surgery. Case I., p. 242.

as regards this may be summarized as follows: The murmur heard to-day and yesterday is pretty decidedly of auriculo-systolic rhythm, but brief and rather indefinite in quality, so that even apart from the facts above stated Dr. Gairdner would have some difficulty in pronouncing upon it absolutely as a murmur of mitral stenosis; although he would say that supposing it to be proved endocardial, it would be of this character.

"Dr. Gairdner's own recollection of a single observation made on the morning of the comatose attack (March 17th) inclines him to believe that a certain amount of murmur associated with the first sound may have been present throughout; the sound itself being wanting in clearness, and the murmur wanting in definition, so that at the previous observation it was not distinctly classified as auriculo-systolic or ventriculo-systolic, Dr. Dunlop has the impression that no murmur of auriculo-systolic rhythm was audible up to yesterday morning; but that whatever existed at an earlier period (when it was regarded as exocardial) was ventriculo-systolic. (It will be observed, however, that a 'double rub' is noticed in the report of the 11th.) As heard at present (21st), the murmur has a rumbling indefinite character, which makes it exceedingly difficult to predicate its relations to the first sound in a manner that can be regarded as unexceptionable; and this difficulty is increased by a peculiarity in rhythm which has set in apparently since the commencement of the observation. As heard yesterday, the murmur was to Dr. Gairdner's ear rather more decidedly auriculo-systolic."

It is absolutely necessary thus to record all these fluctuating phases of judgment on the bare acoustic phenomena, because no question at all was raised during life which rendered it necessary to entertain the diagnosis of aortic regurgitation, such as was discovered after death. It is even possible, considering the nature of the lesion, that the aortic regurgitation may not have been present on admission; and that the sounds which were at the first regarded as friction may have been really so, as there was noted after death some rough old deposit on the pericardium near the left apex. But it is certainly remarkable, both from the negative and the positive point of view, that the facts so elaborately and carefully recorded above should have been associated with the following post-mortem appearances, viz.:

"The heart is considerably enlarged, weighing sixteen ounces. On the right curtain of the aortic valve there is an aperture about one-half of an inch in diameter, the upper part of which is about one-eighth of an inch from the edge of the curtain. This aperture is surrounded by lobulated projections of a white color which protrude from the ventricular surface. There is some more red-colored deposition on the valve beneath these. The left lung is slightly adherent posteriorly. There is on the basal surface a somewhat thick deposit of tough fibrin. The lower lobe of this lung, and the lower part of the upper lobe present an œdematous semi-condensed condition. The right lung is non-adherent and otherwise normal."

In placing this case on record, I am very well aware of the numerous imperfections and doubts attaching to the observations above reported.

The error of nomenclature above noticed seems to have been introduced into the proof after it left my hands. I desire to note here that

But as it happens to be the very first instance in which facts bearing at all in the direction of the late Dr. Austin Flint's now well-known thesis in respect to the pre-systolic murmur have occurred to me, and as Dr. Byrom Bramwell has recently contributed to this JOURNAL for March, 1888, another exceptional case presumably of the same or similar order, I regard it as simply a matter of duty to avoid the implication that any important observation, apparently opposed to the current theory of mitral stenosis and its murmur, will be on this account suppressed. At the same time it is surely not unbecoming to emphasize the fact, that Dr. Bramwell's case, observed in October, 1886, and the present one, are actually, I believe, the only contributions hitherto from the European side of the Atlantic to the theory in question, viz., that a characteristic pre-systolic murmur, such as in most cases accompanies mitral stenosis, may be produced without disease of the mitral orifice, when there is present exceedingly free regurgitation through the aortic valves.

Dr. Bramwell's case, though very striking and up to a certain point convincing as to its clinical features, is deficient, considered as evidence, from the want of a post-mortem examination. The present case, on the other hand, is one in which the clinical evidence fails to come up to the standard of precision, while the post-mortem results are such as, with better and more secure clinical data, might be accepted as conclusive. The two cases taken together show that the apparent corroborations of Dr. Flint's theory are probably few and far between. This is not by any means a legitimate reason for setting aside the theory or the facts adduced in support of it. But it is a reason for suspense of judgment until the multiplication of unquestionable facts in the experience of competent observers has allowed of the question being looked at all round, as it were, instead of merely as one involving the authority, high as it is, of one distinguished man.

As the matter stands at present, Dr. Flint's first case was observed in May, 1860, and his second in February, 1861. There is then a long pause, and no other case appears to have occurred to him for more than twenty years. Another case, however, in America is alluded to in a footnote in the posthumous edition of Dr. Flint's *Principles and Practice of Medicine;* and yet another recent case is quoted by Dr. Bramwell from the *Transactions of the Association of American Physicians.* These are, so far as known to me at present, all the materials available in print for the consideration of this subject.

Dr. Flint's theory, reduced to its simplest possible expression, is that when the ventricle is prematurely filled, and over-filled, during the diastole, owing to free regurgitation through the aortic valves, the mitral curtains are floated up, mechanically, so as to lie athwart the auriculo-ventricular opening, and to close it; and that the auricular ~~contraction,~~ systole coming later in sequence, surprises (so to speak) the valves in this ab-

normal position, and the current of blood thus established from the auricle thrusts them back again so as to give rise to "a blubbering murmur." The murmur is not, therefore, one of mitral stenosis, inasmuch as the opening is not diseased in any way; but it is, nevertheless, one arising out of mechanical conditions closely allied to mitral stenosis, and as regards their momentary physical and acoustic result, identical with it. Dr. Flint is himself most careful to point out that the theory as now given is in no degree opposed to the current theory of the murmur of mitral stenosis, which still remains intact as the explanation of all but a very few cases. Indeed, the supporters of the current theory have every reason to regard Dr. Flint's view, should it be finally established, as a crowning proof that the murmur in question, quâ the mitral orifice at least, is a *direct*, and not a *regurgitant*, murmur.

But can Dr. Flint's view be regarded as established on the basis of the evidence hitherto produced? It is difficult, I admit, to withstand the force of conviction implied in the statements made in his last article on the subject, and reproduced in Dr. Bramwell's paper already referred to. But knowing as I do the numerous fallacies which beset the observation of such murmurs, and which dictated the cautious wording of the reports in detail in the case above recorded, I feel bound to add that I am still unconvinced. Indeed, I have at present occasional opportunities of seeing a case which very clearly illustrates these difficulties, and which is in some respects the converse of Dr. Byrom Bramwell's case.

The patient is a laboring man who has been in the hospitals both of Edinburgh and Glasgow. In the Royal Infirmary of Edinburgh he was most carefully examined, and held to be a case of aortic disease (obstruction and regurgitation). The opinion I formed of the case, on the other hand, was that it is *mainly* one of mitral stenosis; though not excluding the possibility, or probability, of aortic disease also. The details on which the Edinburgh opinion was founded were placed in my hands, and it is impossible not to feel that the case is one which might possibly corroborate Dr. Flint, although in the meantime I adhere to the diagnosis above expressed. Dr. Byrom Bramwell lately saw this case with me, and, I believe, agrees with me in general terms about it. Were there to be found *no* mitral obstruction in this case, it would go far to carry Dr. Flint's conclusion.[1]

Dr. Bramwell has placed on record a difficulty in the way of adopting Dr. Flint's theory, which is the very great frequency of free aortic regurgitation as compared with the rare occurrence of it in connection with the auriculo-systolic murmur. He quotes Dr. Guitéras, of Charleston, S. C., as having stated, in recording a case of this kind, that he believes

[1] Careful diagrams of the murmurs in this case, as heard by several ears on different occasions, have been preserved, but in the absence of further evidence as to the facts it does not seem necessary to reproduce them here.

"that obstructive functional mitral murmurs are of frequent occurrence in aortic regurgitation;" but in this opinion I apprehend that Dr. Guitéras stands almost alone. Dr. Bramwell, however, holds with Dr. Guitéras (having adopted it, however, as an independent opinion at first), that such murmurs may be more apt to develop when the posterior aortic segment is affected, because in such cases the regurgitant stream is brought to bear directly against the anterior leaflet of the mitral valve.