An Analysis

OF

FIFTY CASES OF VALVULAR DISEASE OF THE HEART, WITH REMARKS.¹

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As a basis for the discussion which is to follow I shall begin by giving a short analysis of fifty cases of valvular disease of the heart occurring in my practice within the last few years. The cases have not been in any way specially selected and may be taken as fairly typical examples of the disease in question. I should perhaps remark that the series consists almost exclusively of adult cases.

Seat of lesion.—In no less than thirty-three out of the fifty cases the only lesion that could be definitely made out was mitral regurgitation. This confirms what is, I think, the general experience, that this is much the commonest form of valvular defect. We must, however, bear in mind the well-known fact that it is common at post-mortem examinations to find lesions of the aortic valves which had escaped recognition during life. If we looked at clinical evidence only we should probably overestimate the relative frequency of mitral lesions. My cases do not happen to include a single instance of pure mitral obstruction, and I must express my opinion that this is a somewhat rare form of valvular defect. It is commoner in children than in adults and in the female than in the male sex. Only one case of combined mitral obstruction and regurgitation is included in my cases, although this has been in my experience a commoner defect than pure mitral obstruction. In 13 out of the 50 cases both aortic and mitral valves were affected, the most usual condition being the association of aortic regurgitation with mitral regurgitation. I am disposed to think that in most of the cases of combined aortic and mitral regurgitation the aortic lesion was primary and the mitral secondary. In only 2 of my cases was there pure aortic regurgitation without (sooner or later) mitral involvement, and in only 1 was there coexisting aortic obstruction and regurgitation without mitral defect. I have no records in my present series of any case of pure aortic obstruction; and I believe this, like the corresponding lesion of the mitral valve, to be a somewhat rare affection. My cases would then, so far as they go, seem to warrant the following conclusions regarding the relative frequency of the different valvular lesions—(1) That pure mitral regurgitation is much the commonest of all; (2) that next in order follow aortic lesions combined with mitral regurgitation; (3) that pure obstruction, either at the mitral or aortic orifice (at least sufficient to cause symptoms and afford adequate grounds for diagnosis) is a somewhat rare condition.

Age.—I find that of the 50 cases 27 had attained the age of thirty or upwards, while 23 were under that limit. On inquiring into the influence of age upon the relative frequency of the various lesions I find some interesting results. Thus the average age of 33 patients with pure mitral disease was found to be twenty-nine, while the average age of 14 patients in whom the aortic valves were affected either with or without mitral disease was found to be forty-one. This is a decided contrast, and illustrates the well-known rule that mitral disease falls rather on the earlier years of life and that aortic lesions become more frequent with advancing age. This law is explained by the fact that mitral lesions are usually the result of endocarditis, while aortic lesions are often the consequence of atheroma or other degenerative change in the walls of the arteries.

Sex.—I find that 26 of my 50 cases were males and 24 females, which would seem to indicate that sex has little influence in predisposing to valvular lesion of the heart. This is in striking contrast to the facts regarding aneurysm, which, as is so well known, occurs with greatly preponderating frequency in the male sex.

Etiology.—My cases bring out strongly what is the most

familiar fact in connexion with the etiology of valvular lesions of the heart—viz., the great part played by rheumatism.

In 27 out of the 50 cases there was a clear rheumatic history. In 5 of the cases rheumatism was associated with scarlet fever. In 23 cases no history of rheumatism could be made out. I have sifted this series of cases as carefully as possible regarding the pathological conditions either antecedent to or associated with the valvular lesion with the following results. Two cases were probably congenital, and may therefore be dismissed. In 6 cases hard drinking was acknowledged. Syphilis was present in 4 cases. Chronic bronchitis was likewise present in 4 cases. Bright's disease was also found in 4 cases. In 2 cases remittent fever had existed, and in most of the remaining cases no trustworthy data were available. These figures would seem to indicate that (as is universally admitted) rheumatism is by far the most potent factor in the causation of valvular cardiac lesions, and that next follow (but at a great distance) drink, syphilis and renal disease. In a very large number of cases the important element of muscular strain was present, but I have found it impossible to separate this from the other conditions enumerated. As regards the rheumatic cases, my records seem to show that the heart often withstands the first attack of rheumatism, sometimes a second, but that it inevitably gives way when there is a series of such attacks. I have not been able to make out to my satisfaction the probable duration of the cardiac lesions before the cases came under observation. One case had apparently lasted ten years, another five years, but in most cases there were no adequate data for determining the point. As regards the results of treatment, 15 cases died and the remaining 35 improved. In 17 cases the improvement was noted as slight or fair, and in 18 cases as marked and decided. Of the 15 fatal cases 9 were cases of mitral regurgitation, 2 were cases of pure aortic regurgitation, and 3 were cases of combined aortic and mitral disease.

I now wish to invite the attention of the Ulster Medical Society to a few general problems of prognosis in the class of affections under consideration. First, what is the relative gravity of the four principal valvular lesions of the heart? We may answer, I think with confidence that pure aortic obstruction is the least serious, pure aortic regurgitation the most serious, and that affections of the mitral valve are intermediate. Opinions have differed much regarding the relative gravity of mitral obstruction and mitral regurgitation. On the whole I incline to the view of Drs. Bristowe, Wilks, Peacock and Sansom that the prognosis is somewhat more favourable in obstruction, as it has seemed to me that compensation is better maintained in this lesion than in regurgitation. I would point out, however, that, as the majority of the cases of mitral obstruction which come under observation are found either in children or women, whereas mitral regurgitation is common in both sexes and at all ages, the comparison is hardly a fair or an instructive one.

I pass on to consider a much more arduous problem. Given a case of, say, mitral regurgitation, can we determine with any approach to accuracy the probable duration of life? It is now quite certain that these cases may live for ten, twenty, thirty, or forty years, so that in fact their serious defect may not shorten life at all; or, on the other hand, they may hardly live so many weeks or days. It becomes a most interesting and vitally important question to determine how far we can draw the line between the two classes of cases. Perhaps I shall best solve the problem that I have propounded by giving the substance of the teaching of Sir Andrew Clark, Professor Gairdner, Dr. Clifford Allbutt and others who have defined for us with considerable precision the cases of mitral regurgitation which may be reasonably expected to survive for many years. Sir Andrew Clark enumerates the following conditions as enabling us to speak favourably of the prospects of life in such cases:—(a) General good health; (b) just habits of living; (c) no exceptional liability to rheumatic or catarrhal affections; (d) origin of the valvular lesion independent of degeneration; (e) existence of the valvular lesion without change for over three years; (f) sound ventricles of moderate frequency and general regularity in action; (g) sound arteries with a normal amount of blood and tension in the smaller vessels; (h) free course of blood through the cervical veins; (i) freedom from pulmonary, hepatic and renal congestion.

I need hardly point out that the cases of mitral regurgitation presenting all these conditions are very exceptional

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indeed; but they do occur sometimes, and it is most important that we should be able to recognise them. One of the conditions—viz., that the lesion shall have existed without change for over three years—is obviously a point very difficult of determination, and impossible to establish on a first examination. Hence, it is only after we have had a case of this kind for some time under observation that we are justified in speaking hopefully of the prospect of life. There is one class of case that calls for care and discrimination as regards prognosis. I mean where we have some regurgitation through the mitral valve as the result of sudden dilatation of the left ventricle and independent of actual structural damage to the valve. Some years ago a gentleman consulted me under the following circumstances. He had enjoyed good health until a few days previously, and had never had rheumatism. A few days before his visit to me he had undergone severe and unusual physical strain and had been seized with sudden and severe dyspnoea, which continued up to the time of my examination. I found the heart acting violently, but there was no evidence of hypertrophy. Auscultation revealed a loud bellows murmur at the apex and heard over a wide area. There was no pulmonary congestion, dropsy, or other evidence of systemic engorgement, and the only symptom complained of was the dyspnoea. I formed the opinion that in all probability the case was one of acute dilatation of the left ventricle from overstrain, and that while the prognosis was not free from anxiety, the prospects of recovery were good. I accordingly spoke encouragingly; ordered complete rest and tonics. The case rapidly improved, and in a short time all the troublesome symptoms had disappeared. I have not seen the patient for some time, but have lately heard that now, at the expiration of several years, he remains perfectly well. We must remember that all cases of acute dilatation of the left ventricle do not pursue this favourable course. Sometimes dropsy and the other signs of cardiac failure rapidly supervene and the patient dies, but the prognosis is essentially different from that of organic valvular disease. The particularly loud murmur present in this case leads me to remark that there is no greater error in dealing with cardiac disease than to regard a loud murmur as necessarily indicating a serious lesion. As a matter of fact the rule is rather the other way. In regurgitant mitral disease the loudest murmurs are produced by a small amount of blood being strongly forced through the valve by a vigorously contracting ventricle. The worst sign of all is where a loud murmur gradually becomes feebler and eventually disappears owing to failing contractile power of the ventricle. A murmur may, of course, also become feebler owing to increasing competence of the valve. The clinical signs will serve to differentiate the two cases.

There seems no doubt that occasionally, though rarely, organic valvular disease may entirely disappear. The best observers are agreed upon this point. There is no doubt whatever that the cardiac murmurs often present in chorea pretty frequently disappear, and everything seems to point to the conclusion that these murmurs are organic and not functional. The topic of prognosis in valvular affections naturally suggests the question whether any of the subjects of this affection may be fitly passed for life insurance at some increased premium. Most offices refuse positively to accept any applicant who has any form of cardiac disease; but this is not an absolutely universal rule and the point may arise with any of us. Sir Andrew Clark and Dr. Clifford Allbutt are both of opinion that certain cases in the class under consideration may be safely selected for insurance at some heavy increase of premium. The cases recommended for such a course are such as those previously described as affording grounds for a hopeful prognosis. Cases of mitral regurgitation, which have remained *in statu quo* for several years, where there is no change in the ventricle, no accentuation of the pulmonic second sound, no evidence of embarrassed circulation, and no subjective symptoms, are suggested as fair subjects for insurance at certain rates. Dr. Clifford Allbutt advises that such cases, if accepted, should be put upon the early payment system, so that all the premiums should be paid by the age of thirty or thirty-five. I confess I should hardly feel at liberty at present to recommend for insurance any applicant who presented the signs of organic valvular disease of the heart, though I have little doubt that there will, in the early future, be such an advance in precision of prognosis as to permit of this being done in a manner equitable alike to applicants and to the insurance companies.

ON FREE FLUID IN THE ABDOMINAL CAVITY OF THE FEMALE.

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IN the majority of cases the fluid which is found free in the abdominal cavity resembles the normal transudations of the body. Occasionally, however, it differs from dilute liquor sanguinis as it may be poured out by the rupturing of some cyst or abscess or the bursting of one or more blood-vessels. From the peritoneal sac of a well-fed animal, especially after the ingestion of a good meal, one is able to collect a quantity of serous fluid. Under ordinary circumstances, however, the arterial and venous pressures are so regulated that this liquid does accumulate, but forthwith it finds its way again into the blood through the lymphatics. When therefore dropsy of the peritoneum occurs we may practically consider it as resulting in consequence of some derangement of a physiological phenomenon. The capillary system we know is the seat of the phenomena of nutrition, absorption and secretion, and it is to this system we must look for an explanation of the manner in which dropsy of the peritoneum takes place. If in a healthy animal we ligature the principal vein of a limb it does not follow that by thus interfering with the return of blood we shall produce oedema of this extremity. When, however, we cut the vaso-motor nerves the interstitial meshes of the area so disturbed are forthwith more or less markedly infiltrated by a serous exudation. In this case we destroy that tone of the vessels which is so essential for the maintenance of those physico-vital processes which are for ever going on, and by so doing we favour not only the transudation of serum, but interfere with the rate of absorption. Dropsy of the peritoneum very frequently depends upon inflammatory disease of the kidneys or upon organic disease of the lungs or heart. In this group of cases it is but a portion of a general dropsy, as the universal areolar tissue is similarly infiltrated. It is not my intention to deal at present with this form of ascites, but with that which, generally speaking, is not attended with anasarca elsewhere. The following are a few cases selected from a considerable number belonging to this category which have come under my own observation.

CASE 1.—*Free fluid in the abdominal cavity in association with fibroid induration of the stomach and general fibroid thickening of the peritoneum.*—A. L—, aged thirty-five and married twelve years, had one child ten years ago. Menstruation, established at the age of twelve, has usually lasted five days. She was last unwell fourteen days before coming under my care on Oct. 20th, 1888. Since Oct. 1887—i.e., for twelve months—the patient has complained more or less constantly of a “grumbling pain” in the abdomen. This pain has never been severe. During this same period she has also complained of sickness. At first she vomited only occasionally, but latterly she has been sick at least once every day. Sometimes she has experienced severe stabbing pain in the region of the stomach, especially after the ingestion of food. About July, 1888, she remarked that her abdomen was increasing in size, and since then it has gradually become more and more prominent. There is nothing to note about the bladder except that the patient states she has always had to micturate frequently. During the last three weeks the bowels have been opened two or three times a day. Throughout this illness the menstrual discharge has recurred regularly every four weeks, and there has been no variation as to amount. The patient thinks she has gradually been losing flesh during the last two years.

Physical signs.—The abdomen is prominent, but not tense; it is tender all over to the touch, and dull to percussion to midway between the pubes and umbilicus; this dullness extends into the right flank, whilst the left is resonant; the dullness on the right side is not affected by altering the position of the patient; fluctuation is readily elicited. The vaginal examination revealed nothing of note in the pelvis.

From the date on which this patient came under my observation—viz., Oct. 20th, 1888—until April 3rd, 1889, when she died, the stomach emptied itself of its contents once or oftener every day. During this period she was tapped twice. The first tapping was performed on Dec. 28th, when a gallon and a half of straw-coloured serum was drawn off; at the second tapping, on Jan. 5th, one gallon only was removed. The temperature throughout was practically normal.