

balancing probabilities, but to proceed at once to operation. If the case is one in which surgical aid is unavailing or unnecessary no harm will be done by a surgeon versed in the technique of abdominal work, while prompt interference has saved many lives.

I believe the lesion present was the result of infarction from mesenteric thrombosis. The specimen was unfortunately mislaid before a microscopic examination was made.

ART. XIII.—*Digitalis in Heart Disease.*^a By REGINALD C. PEACOCKE, B.A., M.D., B.Ch., B.A.O. Univ. Dublin.

DURING the last few years the attention of medical men has been largely devoted to several new methods of dealing with diseases of the heart. For example, we have the treatment by "passive movements," consisting of a series of gentle manipulations of the different parts of the body—a mode of treatment first practised in Sweden by Ling and his followers; next we have what may be called a modification or development of the Swedish system—namely, the treatment by gymnastic exercises, consisting of a series of certain carefully regulated movements with limited resistance, a system which has been carefully worked out by the brothers Schott of Nauheim, and with which is combined in most cases a course of baths rich in mineral salts; lastly, we have the more heroic method of Oertel—by climbing heights.

Now, most observers agree that though all these systems have their uses in different forms and phases of heart disease, yet after all they only constitute a very valuable addition to, but by no means take the place of, the older methods of treatment by means of rest, diet, and medicine. Of all the medicinal remedies which from time to time have been used in the treatment of disease of the heart, the most valuable is certainly *digitalis*; and in order to fully understand in what morbid conditions benefit from its use may be expected, it will be necessary, first, to see what science teaches us with regard to its mode of action, and then to consider the practical results of clinical experience. The

^a A Thesis read before the Regius Professor of Physic for the Degree of Doctor of Medicine in the University of Dublin, December, 1900.

view which is, I believe, generally adopted now is, that digitalis influences mainly the muscular tissues of the body, both striped and unstriped, although it may also owe some of its usefulness to minor effects exerted upon and through the vagus; of all the muscular tissues it acts chiefly upon that of the heart, next upon the unstriped fibres of the arterioles and the alimentary tract, and least—in fact only when a lethal dose is given—on the skeletal muscles; the vomiting and diarrhœa which digitalis sometimes causes, thus, theoretically at all events, only manifest themselves when we are giving more of the drug than is needed for action upon the heart, but, in practice, we occasionally meet with cases where we are obliged to abandon the remedy altogether, owing to the gastro-intestinal disturbance it produces.

As to the precise effect which digitalis has upon the muscular tissue, Professor Schmiedeberg has shown that it renders its elasticity more perfect, so that each fibre extends more completely, and increases its contractility, so that in contraction each fibre returns more perfectly to its minimal length; in accordance with this, the heart is found to expand more fully and to contract more perfectly, and so both diastole and systole are more deliberate, especially the former, while the latter becomes, in addition, more forcible.

Such is the mode of action of digitalis; it is now necessary to consider the various morbid conditions of the heart which derive benefit from its use.

From what has been said of the physiological effect of digitalis on the heart, it follows that, quite apart from any considerations derived from clinical experience alone, the presence of threatened heart failure arising from inefficient ventricular systole is an important indication for its use. Into the diagnosis of failure of the heart it is not now necessary to enter deeply; feebleness and irregularity of heart sounds and pulse, dyspnœa on exertion, dilatation of the cavities, cardiac dropsy and the diminution or loss of murmurs previously present—these all constitute a well-known picture, and are signs which point to inefficient systole, and consequently suggest the use of the best of all cardiac stimulants—digitalis.

But before discussing in detail the question of the use of this powerful drug in organic diseases of the heart, a word must be said with regard to its use in many cases of serious illness—such as pneumonia—when the danger of death arises from failing power of the heart; now, many observers state positively that digitalis is useless in such cases, and, consequently, it is with a certain amount of diffidence that I venture to differ from them; but, in my small experience, I have certainly seen two or three cases where it undoubtedly was of use, and in one patient, apparently moribund from phthisis, the administration of tincture of digitalis in half drachm doses certainly was the means of prolonging life. I think, too, in cases of severe illness—as in pneumonia or septicæmia—the administration of digitalis is often a very useful adjunct to alcohol in warding off the most to be dreaded of all complications—cardiac failure; nevertheless, all will admit that it is not in these cases that digitalis is seen to best advantage, but in actual organic diseases of the heart, to the consideration of which we must now turn our attention.

Speaking of the treatment of valvular disease Osler says:—"The indication for the use of digitalis is dilatation; the contra-indication is a perfectly balanced compensatory hypertrophy; broken compensation, no matter what the valve lesion may be, is the signal for its use."

This is a somewhat general statement, some might say a rather sweeping statement, but I think in the main an accurate one. When we have a case of broken compensation to deal with, in certainly by far the greatest number of cases digitalis is the drug most likely to be of use; but the benefit which we may expect from its administration varies, I believe, very considerably in the different forms of heart disease. The beneficial effects of digitalis are, I think, best seen in cases of mitral disease, with small, frequent and irregular pulse, and cardiac dropsy; occasionally in cases of this kind the speedy benefit which the patient derives after a very few doses is almost magical; patients with this form of disease usually bear the drug well, and the error most commonly met with is that of giving it in too small doses.

Again, in dilated and flabby and probably fatty hearts, with soft and often irregular or intermittent pulse, which

we meet with in old people, digitalis also acts admirably; in these cases large and frequent doses are not necessary, but the continuous administration of 5 to 15 minims of the tincture two or three times a week serves to keep the sufferer in comparative comfort, and may safely be given for several months at a time.

The use of digitalis in aortic diseases next requires attention. It is said that in pure aortic narrowing it is always suitable and applicable; the condition is a rare one, and lack of experience prevents my forming any opinion on this point.

It is with regard to aortic regurgitation, whether accompanied or not by stenosis, that so many eminent observers seem to differ. Osler says that digitalis is just as serviceable in aortic regurgitant cases as in any other conditions associated with progressive dilatation.

Taylor is more cautious, and says:—"There is a greater risk of syncope from aortic disease during the use of digitalis, unless this failing is fully compensated for by the more powerful action of the heart during systole."

Though I have never seen any really bad results from the use of digitalis in these cases, yet to maintain that it is suitable and applicable in all cases of double aortic lesion, or of regurgitation alone, with of course failure of compensation, is not borne out by my limited experience.

As we have seen, the action of digitalis is to prolong diastole while strengthening systole, and, theoretically at all events, the administration of the drug so as to produce this result, even in a slight degree, is attended with danger, for even moderate prolongation of diastole may give time for an amount of blood to regurgitate into the ventricle, which may lead to increased embarrassment or even fatal degree of over-distension. I think the pulse is our best guide in giving digitalis in cases of doubt; in the first place, if the pulse be from 60 to 70 digitalis is not at all suitable, while on the other hand many cases of aortic incompetence with a frequent pulse which can be slowed to about 70 are benefited by digitalis. There are, however, some cases with frequent pulse-rate—I particularly remember one, a man of about thirty, with history of rheumatic fever, with a double aortic murmur and all the signs of failing compensation—

in which the pulse is not influenced for good by digitalis, and in these cases there is often, I think, other evidence of acute changes proceeding in the endocardium. Another point of importance, determined by a careful study of the pulse, is the presence or absence of arterial spasm; it is readily recognised in the radial artery by the firmness of its wall, and this is quite appreciable notwithstanding the collapsing character of the blood-wave so noticeable in aortic regurgitation. The presence of this spasm is a contra-indication to the use of digitalis, which will be found to be, if not hurtful, at all events useless.

In actual experience it is very difficult to say whether a case of cardiac distress, due to dilatation and failing hypertrophy sequential to aortic disease, will be benefited by digitalis or not; the scientific fact that it prolongs diastole, which is the time that the secondary ill effects are produced when the aortic valve is leaking, is certainly not one to be lightly lost sight of, and in consequence of this fact I always prefer to try some other remedy first (usually nitroglycerine), and yet I can truthfully say, that I have seen more cases of this disease in which digitalis has done good than cases in which it has failed to do good.

There is only one other class of cases which, though not perhaps strictly cases of heart disease, I should like to refer to briefly—namely, cases of acute alcoholism with what has been called a “flabby heart and pulse.” These cases respond well to digitalis; it acts, I think, beneficially in two ways—first as a pure tonic to the ill-used “flabby” heart, and, secondly, by counteracting the depressing effects of those other drugs which the nature of the disease renders it necessary for us to administer.

In concluding these remarks about the uses of digitalis, I may perhaps mention that unfortunately in those cases of failing compensation sequential to organic heart disease, where in the past the drug has been of surpassing value, there comes at last a time when the distressing breathlessness, the steadily advancing dropsy, the frequent, weak and irregular pulse resist all remedies; now even the best of them all, digitalis, which many a time, alone, has triumphed over disease, and, so to speak, shut back the “opening door of death,” is of no avail; sooner or later this time must

come in all cases of diseased heart, and one of the most difficult questions for the physician to decide, and one that he is very often called upon to decide is this—"When are we face to face with the final breakdown of compensation when the worn out, flickering heart must soon cease to beat for ever?"

ART. XIV.—*Clinical Reports of the Rotunda Hospitals, for One Year, November 1st, 1898, to October 31st, 1899.* By R. D. PUREFOY, M.D. T.C.D., F.R.C.S.I. (Master); and R. P. R. LYLE and H. C. LLOYD (Assistants).

(Continued from page 206.)

MULTIPLE PREGNANCY—TWINS.

TWENTY-EIGHT cases of this variety of multiple pregnancy were treated in the hospital during the year, giving a percentage of 1·82. The following table shows the presentations:—

Both Vertex	...	...	7
Vertex and Breech	...	...	9
Breech and Vertex	...	...	5
Both Breech	...	...	4
Vertex and Transverse	...	...	1
Vertex and Face (Locked)	...	...	1
Born in Membranes (5½ months)	...	...	1
<hr/>			
Total	...	...	28

Twenty-one of these patients were confined at or near full term, and all these children, with one exception, were born alive. In this case the woman, a 6-para, had never given birth to a living child, and both the fœtuses were macerated. She carried them just beyond the eighth month, and the case is also recorded under "Hydramnios."

In 17 of these the natural efforts expelled both children. Two of them, one a 12-para and one a 7-para, had previously borne twins.

The case in which vertex and transverse presentation occurred was amongst the 7 premature deliveries. In only 2 of these cases had the children reached a viable period, and they were born alive. Two at an early period of pregnancy were expelled in the membranes.