ON THE USE OF DIGITALIS IN AORTIC DISEASE.

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IN Dr. Barrs's paper in the *BRITISH MEDICAL JOURNAL* of March 12th some theories have been advanced which are not considered orthodox and, if true, will disturb the lines of treatment recognised by our best, with some notable exceptions, clinical observers.

It is not my intention to discuss Dr. Barrs's able paper in its entirety, but I should wish to argue from clinical experience, as Dr. Barrs does, against some of the points which he has advanced.

First, I would point out that there is little or no comparison between the action of the aortic valve and that of the mitral. The strain on the former is, during diastole, much heavier, and more sudden and accentuated, than on the latter during systole. In other words, the closure of the aortic valve is akin to the slamming of a door, the strain commencing from the very moment at which systole ceases, whilst the apposition of the mitral folds is a gradual process, tension on the curtains to any marked extent occurring only at the end of ventricular systole, and is momentary only. And this seems to be more than emphasised by the existence in some of the lower animals not only of one tier but of several tiers of cusps in the aorta to withstand the rebound on the column of blood. The aovirdupois of about the equivalent to 6 inches of mercury has to be considered in the aortic valve, and this is supported not only by the cusps themselves, but as Savory has shown (and notwithstanding the tendency of modern physiology to disturb previously-accepted doctrines, this observation still seems to remain true), by the ventricle muscle itself. There is no such mechanism in the mitral valve, and therefore the incompetence of the two valves rests, to my way of thinking, on totally different physical bases. In the one it is always serious and alarming, in the other it may be, and frequently is, attended by only trivial inconvenience.

As Dr. Barrs admits, the danger in aortic incompetence exists from "sudden or gradual"—sudden rather than gradual—"failure of the left ventricle," a failure which, perhaps, is enhanced by a hitherto compensatory hypertrophy expelling a wave of blood with more power than normal into vessels of low tension, and the return of this volume must be accommodated not so much by "hypersystole" as by hyperdiastole of the left ventricle. For here, after all, is the rub. Undoubtedly digitalis increases the length of ventricular diastolic period. The heart, slowed by a course of large doses of digitalis, no longer repeats "one-two, one-two"; its muscular apparatus, after a more vigorous contraction, is slower in relaxing, and the sounds are converted into "one-two-o-o, one-two-o-o." Let anyone compare the sharp, short aortic obstructive *bruit* with the long sighing murmur like the noise of a distant blast furnace, and the difference will appear at once; and if this characteristic be further accentuated by digitalis, it is easy to see the risk of the drug.

But there are some cases of aortic incompetence in which digitalis may be given with advantage. Dr. Barrs speaks of cases of "uncomplicated double aortic disease which have been under his treatment for breathlessness interfering with work." It is within my experience that breathlessness is a more marked symptom in simple aortic regurgitation than when that condition is complicated by mitral insufficiency. But it is precisely in these latter cases, when cardiac failure begins to develop, that digitalis is of service. So long as the mitral regurgitation is present so as to allow of a "safety valve" overflow digitalis may be given with advantage and with safety. In the cases where there is aortic insufficiency alone the ventricle has to bear the strain of the return pressure; but given mitral incompetence in addition the over-distended ventricle is relieved by an expansile auricle, and accommodating pulmonary veins and plexus. It is said that this relief may be dearly purchased by a shortened life. Possibly so; but remembering the uncertain span of life in all cases of aortic insufficiency, remembering that even in the most promising cases sudden syncope may close the scene,

I do not quite see how we are justified in thinking that comparative comfort afforded by the addition of mitral regurgitation is a condition not to be desired.

Dr. Barrs's experience and also the experience of other able observers is in favour of digitalis as a remedy in aortic regurgitation. I cannot say that I have been so happy in mine. To quote one example. Some four years ago a young practitioner, who was a careful auscultator, came to me in distress owing to his having prescribed digitalis to three cases of pure aortic regurgitation, which were under his care at an infirmary. The result was disastrous in each case within 48 hours.

REMARKS ON THE USE OF HYOSCINE, WITH NOTES OF A CASE OF POISONING BY THE HYDROBROMATE.

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IN the *Journal of Mental Science* for July, 1891, Dr. Lionel Weatherly supports the use of hyoscine in cases of mental disturbance in which there are restlessness and excitement. "To rapidly subdue delirious and maniacal excitement," he says, "it is certainly a valuable agent in experienced and careful hands." But in cases of mental depression he obtained with it no good result. In one such case, which occurred in my practice about two years ago, and in which the depression was accompanied by great restlessness, I tried this drug, giving $\frac{1}{10}$ of a grain of the hydrobromate for a dose. In this quantity, however, it produced very little effect, the patient remaining quite wide-awake, and exhibiting his customary motorial fidgetiness. Nor was it until the dose was increased threefold—which was done gradually—that somnolence was seen, and this threefold dose ($\frac{3}{10}$ of a grain) had on most nights to be repeated in an hour before actual sleep was got. Thereafter the patient would generally obtain a good and refreshing sleep, and in the morning following would be distinctly better so far as the restlessness was concerned, though still somewhat drowsy. The melancholia was not appreciably affected in any way. Whether the abnormally large dose required here was due to an impurity in the medicine I cannot say. I had no opportunity of watching the effects on other patients of further quantities of the same sample. For, as several of the leading chemists in Edinburgh had not at that time any hydrobromate of hyoscine on hand, the friends of the patient had the prescription dispensed and forwarded by a London chemist. That the dispensing itself was not at fault may be inferred from the fact that, when the bottle was refilled from London, the dose of the new mixture required to be increased in the same way as the dose of the former had been. The results in this case, therefore, differ somewhat from those obtained by Dr. Weatherly. But the next occasion on which I tried hyoscine illustrates the reasonableness of Dr. Weatherly's warning against "the indiscriminate use of it as a powerful and sudden hypnotic."

I subjoin the notes of the case made at the time. The dispensing on this occasion was done by an Edinburgh firm.

Miss R. S., aged 33, exceptionally tall and robust, had been suffering for several days from slight ulceration of the throat and general *malaise*, which caused sleeplessness. For the latter symptom I ordered, on September 2nd, 1889: R. Hyoscin. hydrobromat. gr. $\frac{1}{2}$; aquæ $\mathfrak{z}$ iv. Solve. Sig. Ten drops in a wineglassful of water at bedtime. To be repeated in an hour if patient still awake.

The patient received ten drops (about $\frac{1}{2}$ of a grain) at 9.45 P.M. Shortly after this she felt numbness of the body and limbs, extra dryness of the throat, and dimness of vision. Her face was flushed. She talked in a rambling fashion, but, as this was regarded as part of the legitimate action of a narcotic, no special notice was taken of it, and the friends left the bedroom in the hope that quietude might induce the patient to sleep. During this period, as I learned later, she was quite aware of what was going on, and evidently was conversant with the flight of time, for (there being a clock in her room) she got up at 10.45 P.M., an hour after receiving the former dose, and proceeded to measure out another dose for herself. She remem-