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OBSERVATIONS ON THE PULSE, IN THREE CASES OF SCARLATINA, WITH REMARKS ON THE LOCAL EMPLOYMENT OF ICE IN CASES OF SCARLATINA ANGINOSA.

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[For the Provincial Medical Journal.]

In the forthcoming Report of the King's College Hospital for the year 1841, forwarded for publication to the "Medical Gazette," I have briefly referred to a case of scarlatina, accompanied by an unusually low frequency of pulse. As the case seems to merit some attention, it is here stated more at length, and contrasted with two other cases occurring under circumstances favorable to the daily and regular observation and record of the pulse.

The case to which I have referred occurred in a lad, aged sixteen, who presented himself as an out-patient of the King's College Hospital. He was first seen on the day before the appearance of the eruption, laboring under the usual premonitory symptoms of a febrile affection, with the full, soft, and frequent pulse, which so generally ushers in this form of disease. His pulse was then 120 in the recumbent posture. On the following day the eruption made its appearance, and the pulse in the same posture was 116. On the second day, counting from the appearance of the eruption, the efflorescence had disappeared, but without leaving a single bad symptom behind it. The pulse, however, fell to 59, and, on the third and fourth days, to 55. It rose again on the sixth to 65, and on the seventh it was 102. As the boy felt quite well, he returned, though contrary to my advice, to his work, which was that of an errand boy, but presented himself, after the lapse of a week, to the hospital for admission, laboring under anasarca.

It is worthy of remark, that this low frequency of the pulse was not accompanied by a corresponding reduction in the number of the respirations, as will be seen from the following comparison:—First day, pulse 116, respirations 28; second day, pulse 59, respirations 26; third day, pulse 55, respirations 24; fourth day, pulse 55, respirations 22; fifth day, pulse 65, respirations 21½; sixth day, pulse 102, respirations 26. It is scarcely necessary to add, that both pulse and respiration were counted in the recumbent posture.

It may not be uninteresting to compare this exceptional case with one of more than average severity, where the convalescence was slow and gradual, and none of the sequelæ of the disease occurred. The patient was a lad, of about the same age as the foregoing, and of rather feeble constitution. He first felt ill at five, p.m., complaining of shivering and slight

sore throat. As early as ten o'clock of the same evening the tonsils and soft palate were much swollen, and of a bright red color, and he swallowed with difficulty. At midnight the eruption had made its appearance over the entire body, and the inflammation of the throat was rapidly increasing. As many cases of scarlatina had about this time proved fatal, in consequence of the severe affection of the throat, the patient was ordered to swallow rough ice in large quantities, and candied ice was applied to the throat. The eruption was in no way checked by this treatment, and in spite of this local application of cold, the skin remained moist with perspiration. By the use of this simple remedy, with the occasional employment of saline aperients, the inflammation of the throat was promptly checked, and the patient recovered without a single bad symptom. The pulse was carefully counted in the recumbent posture on successive days, morning and evening, and was found to be as follows:—

	Morning.	Evening.
1st day	120	110
2nd day	108	122
3rd day	102	102
4th day	96	92
5th day	90	92
6th day	90	92
7th day	76	64
8th day	67	68
9th day	72 (sitting)	53
10th day	62	56
11th day	54	—
12th day	60	—
14th day	80	—
21st day	72	—
28th day	82	—

It is worthy of remark, that the lowest frequency of the pulse, 54, corresponded to the period of greatest debility, and that with returning strength the pulse gradually rose to 82, which is about its frequency in health. The effect of change of posture on this low frequency of pulse was very considerable, the number being, standing 104, sitting 57, lying 64, giving a difference between standing and lying of 50 beats; whilst the effect on the pulse of 82, which corresponded to complete convalescence and returning strength, was comparatively slight, the numbers being, standing 92, sitting 85, lying 82, giving a difference of only 10 beats. During the last five days the respirations were carefully counted in the recumbent posture, and were as follows, compared with the pulse:—Pulse 54, respirations 30; pulse 60, respirations 26; pulse 80, respirations 23; pulse 72, respirations 22; pulse 82, respirations 22.

I subjoin an equally careful series of observations on the pulse in the case of a boy, aged twelve, whose disease at the onset was less severe than in the fore-

going instance, but whose convalescence was tardy and imperfect. On the tenth day he was removed into the country, contrary to my advice, and, as I was subsequently informed, suffered very severely from the sequelæ of the disease.

	Noon.	Eight, p.m.
1st day of eruption	130	140
2nd „	130	128
3rd „	136	117
4th „	102	108
5th „	100	102
6th „	92	102
7th „	92	—
8th „	106	—
9th „	96	—

The respiration during the four first days was 24, though the pulse ranged from 140 to 102, the proportions which the pulse bore to the respiration being 1 to 5.83 and 1 to 4.26. It is worthy of remark that, whilst in the former case the pulse on the ninth day had fallen from 120 (the number on the first day) to 53, in this last case it was, on the same day, as high as 96.

The second case, as I believe, represents pretty faithfully the ordinary march of the pulse in febrile affections, which pass through their several stages without interruption from any unusual symptoms. The highest number is generally observed at the commencement of the attack, and in the case of the febrile exanthemata, in the period intervening between the first attack of illness and the appearance of the eruption. When the eruption is fully out upon the skin, the pulse begins to fall, and from that time continues to become less and less frequent, till the entire disappearance of the disease, and the commencement of convalescence. This point of time then is marked by the lowest frequency of the pulse, and each advance towards complete recovery and established strength is attended with an increase of frequency, until at length the pulse attains the number which is natural to it in health. This rule is illustrated by a case of convalescence from fever, which I have elsewhere* reported, in which the pulse in the recumbent posture was, on the seventeenth day, 41; on the nineteenth, 49; on the twenty-second, 60; on the twenty-fifth, 63; and on the twenty-ninth, 80. The patient was a lad, aged nineteen.

It is well worthy of remark that the respiration follows exactly an inverse order during convalescence. Thus, in the case now under consideration, whilst the pulse on successive days was 54, 60, 80, 72, and 82, the respirations were falling steadily from 30 to 26, from 26 to 23, and from 23 to 22. I believe this to be a general rule, that whilst the body is advancing from weakness to strength, the pulse rises and the respiration falls, and that the combination of an infrequent pulse with a frequent respiration is one of the signs of a state of debility.

The first case confirms the statement that mild cases of scarlatina are those which are most commonly followed by the sequelæ of the disease; and the third case illustrates a fact, equally well made out, that when the pulse maintains a high frequency

during the early stage of the disease, a lingering illness and a tardy and unsatisfactory convalescence may be looked for. The first case, as far as my experience extends (and I happen to have seen an unusual number of cases of scarlatina both in hospital and private practice), stands alone. The low frequency of the pulse at so early a stage of the disease is certainly a most unusual symptom, and one which I shall not at present attempt to explain.

The treatment adopted in the second case ought not to pass without comment. At the time that I was called in to see this case, the scarlet fever was extremely prevalent, and had proved fatal in many instances. The danger lay in the violent inflammation of the throat, and I determined, should any threatening case occur in my own practice, to apply my remedies at once to that part. Accordingly, as this case, from the rapid progress of the symptoms, and the violent inflammation of the throat itself, was calculated to excite the most serious alarm, I ordered the patient to swallow as much rough ice as he could, and kept the throat externally cooled with iced water. The other remedies administered were of the most simple kind, and could not be supposed to bear any important part in bringing about the favorable result. That this local application of cold is not likely to produce any bad effect, by preventing the full development of the disease, is shown by the fact that the eruption ran its usual course, and that the skin remained moist during the whole time that the ice was being used. I may add, that about the same time that this case was under my care, I was called in consultation to see the only one of three sisters who recovered from the disease, and whose symptoms were to the full as threatening as those of the fatal cases. She completely recovered under the early employment of the same remedy. This is but one of many local applications of cold which I have found extremely efficacious in diseases in which such a remedy is not commonly employed. There is no doubt that cold, locally applied, is among the most certain and valuable remedies which we possess.

CASE OF TUMOR IN THE RECTUM TREATED BY LIGATURE.

TO THE EDITORS OF THE PROVINCIAL MEDICAL JOURNAL.

GENTLEMEN,—The following case of tumor in the rectum was read to the Association at Exeter on the 4th ult., and as many of the members appeared to be considerably interested by its recital, I shall feel obliged by your giving it further publicity through the medium of your widely circulated Journal.

Your obedient servant,

J. C. JERRARD.

Honiton, September 9, 1842.

CASE.—Mr. Bishop, a respectable farmer, residing in the parish of Farway, near Honiton, applied to me in the beginning of August, 1841, under the following circumstances:—He had been suffering for about eighteen months from pain and a sense of weight in the region of the sacrum. During the latter half of the above-named period he was compelled to rise

* Guy's Hospital Reports, No. 8, Diurnal Variations of the Pulse.