

**ON THE USE OF THE COLD
PACK FOLLOWED
BY MASSAGE IN THE
TREATMENT OF ANAEMIA**

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On the use of the cold pack followed by massage in the treatment of anaemia by Mary Putnam Jacobi & Victoria A. White

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MARY PUTNAM JACOBI & VICTORIA A. WHITE

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ON THE USE OF THE COLD PACK FOLLOWED BY
MESSAGE IN THE TREATMENT OF ANÆMIA.

I WAS led to use the cold pack in the treatment of spanæmia from the belief that it would tend to increase the rapidity of tissue metamorphosis; this would be expected to indirectly increase assimilation, and therefore promote absorption of nutritive material from the digestive canal. To test the correctness of this hypothesis, I analyzed the urine elaborated during the pack and passed immediately after, and compared its composition with that of urine excreted during other portions of the same day. The first conspicuous result of these analyses, was the demonstration of a marked increase in the elimination of urea during the hours of the pack. From this fact I at first inferred that my hypothesis was justified, and that the characteristic effect of the pack was to accelerate tissue metamorphosis—to increase waste and the products of oxidation—thus indirectly promoting assimilation. But closer examination of the facts showed that this conclusion was too general, and that the real influence of the pack both permitted and demanded a more minute analysis.

I regret very much that circumstances prevented me from combining these analyses of urine with the analysis of the blood by means of the hematimetre. This will be done in another series of cases. In these, the modifications of

the anæmic condition were estimated by the ordinary clinical tests.

When the urine was analyzed, the urea was estimated by Liebig's volumetric tests. In two clinical and two experimental cases, the analysis of the urine was carried farther, and a quantitative estimate obtained of the inorganic salts and of the organic material other than urea, including uric acid, and the substances sometimes classed together as "extractive." The method for obtaining the quantitative estimate of the latter, was adapted from Neubauer and Vogel, pp. 149, 150.*

In the three final cases no examination of urine was made, but the cases are recorded for the sake of the clinical results.

CASE 1.—Miss A. B., æt. 21, first seen May 8, 1878. Then in a profoundly anæmic condition; weighed only 78 lbs., and was so feeble that she could with great difficulty mount the stairs, or even walk on level ground. The anæmia seemed to have initiated in repeated attacks of malarial fever. At first, menstruation had been very profuse, and recurred every three weeks; this, doubtless, contributing to the anæmia in which the menorrhagia origin-

* The entire weight of the solid constituents of the urine was first calculated from the specific gravity carried out to four decimal points. The above calculation is for 1,000 c.c.; from it a calculation is easily made for 10 c.c. The amount of urea in 10 c.c. of urine was then ascertained by Liebig's test. Another specimen of 10 c.c. was evaporated to dryness over a water-bath, in a small, accurately-weighed, fine porcelain capsule with a close cover. This capsule was then placed on a triangle and heated until all the organic matter of its contents had been completely carbonized. Boiling water was then poured upon the contents of the capsule; allowed to stand a little while and then filtered off through a weighed filter; and this process repeated (the same filter always being used) until the carbonaceous mass was entirely freed from the soluble salts. The filter was then returned to the capsule, the latter covered, and with its contents cautiously raised to red heat, when the entire carbonaceous mass was consumed and disappeared. To the same capsule was now returned the solution of salts; this evaporated to dryness; the residue heated to red heat for a moment; the capsule cooled over sulphuric acid and weighed. After deducting the weight of the capsule and of the ashes of the filter previously estimated, we thus obtained the weight of inorganic salts in 10 c.c. of urea.

This weight was deducted from the total amount of solids calculated from the specific gravity; the residue was the organic matter in 10 c.c. From this was again deducted the amount of urea estimated volumetrically; the residue was the extractive.

These amounts thus ascertained for 10 c.c. were calculated for the whole amount of urine analyzed.

ated. For eleven months there had been complete amenorrhœa. The patient had suffered for years from constipation, but during the last year this had become excessive; on account of it the patient had been several times treated by drastic purgatives, with the effect of making her condition worse. For about nine months the constipation had been complicated with a "membranous colitis." There were frequent discharges of the characteristic mucous membrane from the bowels; on one occasion, after a colocynth pill, this membrane was tubular, and measured three-fourths of a yard. Associated with this was marked tenderness on pressure over the left end of the transverse colon and over the entire descending colon. The anorexia was extreme. There was much sleeplessness and nervous irritability; a good deal of spinal tenderness to pressure existed. There was absence of respiratory murmur; prolonged expiration and dulness at the apex of the left lung.

The treatment was at first directed toward the relief of the obstinate constipation and (probably) passive hyperæmia of the colon. The patient was directed to take cold water enemata, from 2 quarts to a gallon in quantity daily. A grain of tartate of iron and potassa was given every hour, together with minute doses of powdered ipecac. To avoid irritation of the intestine, and to secure nourishment by stomach absorption, the patient was placed upon milk diet and soups, containing a fixed quantity of Leube's extract. Of this, during the first fortnight, she took only a tablespoonful a day, together with one quart of milk.

On June 11th there was already considerable improvement. The enemata procured regular evacuations, in which were only shreds of mucus. The tenderness over the colon, also that on the spine, was quite gone; the sleep was much better. On this day, while insisting on an increase in the food, the cold pack was first ordered, together with entire rest in bed. The pack was to be taken every other day, to last an hour, and to be followed by massage. The patient was to be enveloped first in the wet sheet, this surrounded by a dry one, and that by six blankets, the whole drawn tightly around her body.

As the patient lived at some distance, the massage was performed by a woman procured from a bathing establishment, and, as I had reason subsequently to believe, the rubbing was quite imperfectly administered. The benefit derived from the combined treatment was therefore much more attributable to the pack.

On June 22d the patient reported that she was always very much

tired on the day of the pack, but "felt splendidly" the next day. At this date was taking two quarts of milk besides the Leube's extract, and felt a desire for ordinary food, as she had not done for 18 months. Weighed 84 lbs.,—gain of 6 lbs. since beginning of treatment, and of 2½ lbs. in the week following the pack and rest in bed.

The patient stayed in bed for three months from June 11th, receiving the packs every other day, and continuing the rest of the treatment, upon whose details it is not necessary to dwell.

Mixed diet was resumed on July 4th, but after an attack of diarrhoea a temporary return was made to the milk. The cold water enemata were replaced by enemata of lime water.

On September 9th, patient still required enemata, and there was occasionally some mucus in the stools, but she announced herself as feeling "perfectly well." Had a good appetite, slept well, had no pains. Weighed 93 pounds, face full and colored. At this time perspired freely in packs. From this date packs and rests in bed were given up; enemata replaced by small doses of tamar indien; the iron and ipecac continued. The improvement in strength was so rapid that in a short time the patient could walk several miles. Menstruation recurred a year later. The patient has continued not only well but, to her own view, robust—certainly active, rosy, and stout enough for her age. The induration or collapse at the apex of the right lung entirely disappeared.

In this severe case the complexity of the treatment adopted makes it a little difficult to estimate the precise share attributable to the pack. The prolonged rest in bed might by some persons be credited with the largest share in the recovery, since the essay of Weir Mitchell has so widely popularized the idea of rest in the treatment of anæmia. I think myself, however, that this rest was of the least consequence in the case. The girl never had been overworked in any way, hence the etiology of her anæmia was entirely different from those in which rest is so beneficial; moreover, owing to her great debility, this patient had been in a state of nearly complete repose for two or three months before I saw her, from incapacity to choose otherwise. Yet her condition steadily deteriorated; she was wasting away from slow starvation.

In regard to the massage, I have reason to believe that it was not energetic enough to affect the muscles; its influence was probably confined to the skin. The iron was unquestionably of importance; but, before the course of treatment above indicated, the patient had frequently taken iron without benefit. Finally

the enemata may be supposed to have powerfully affected the circulation of the intestine, and to have acted synergistically with the cold pack in promoting absorption.

CASE 2.—Miss C. D., young lady of 25, profound anæmia with amenorrhœa, obstinate constipation, resisting purgatives, as podophyllin and castor oil, which were often employed. Two years before the first consultation, patient had had an attack of scarlatina. After this, failed to menstruate for six months, then menstruated throughout the winter for another period of six months, then the menstruation ceased again and had been absent for a year. Associated with the obstinate constipation, was atonic dyspepsia; and as a result of both the anæmia and the digestive disturbances it caused, the patient suffered from abundant acne simplex, which covered the face with comedones.

She was ordered to take a grain of tartate of iron and potassa every hour: daily enemata of two quarts of cold water each: diet of milk and Leube's extract, and the cold pack followed by massage every day. As a further corrective of the intestinal anæmia, belladonna tincture was given, gtt. v every three hours.

The patient soon found that the combination of iron and belladonna, when taken with the large enemata, sufficed to obviate the constipation; but that either of the three remedies alone was quite insufficient. The treatment was begun about October 1, 1878.

On December 20th, reported considerable improvement. The amount of food had not exceeded one quart of milk and nine tablespoonfuls of Leube's extract a day; but this seemed to be sufficient, at least for the conscious wants of the patient. There was no more distress after eating, nor pain in the stomach or bowels. The acne had improved, the face was less swollen, less blackened with comedones, of which there were, however, still an undesirable abundance. The patient at the beginning of the treatment had been thin; but now, although feeling stronger, had become still thinner. The treatment was continued, but the enemata were reduced to a pint, which was now found to be sufficient, while the belladonna and iron were taken regularly. Meat was allowed once a day. On June 12, 1879, reported again. While above régime was followed strictly, remained quite free from dyspepsia; with the least variation from it, however, food lay heavy and undigested in the stomach. The acne had nearly disappeared.

The patient went to Europe in this month, and stayed until