then found that the hypochondriac mass originated in the gall-bladder area and directly involved the duodenum, while there were many peritoneal deposits which were thickly crowded in the pelvis.

Cases like these show the absolute need of routine rectal examination, and are eloquent testimony to the very valuable evidence that may be so gained.

I have no personal statistics as to the proportion of cases in which this sign is present, but Dudley W. Palmer⁴ has investigated a consecutive series, and I quote from his paper as follows:

In the 435 case histories were 307 cases of carcinoma of the stomach, the remainder being of the intestine, pancreas, liver, and gall bladder. In this number 28 (or 6½ per cent.) showed secondary deposits on the rectal shelf or in the cul-de-sac of Douglas. No secondary deposits were to be palpated through the abdomen, and, with two exceptions, abdominal fluid was clinically questionable or absent.

The discovery of such pelvic deposits may not only establish the diagnosis of malignant disease, but may at the same time be the earliest clinical sign of inoperability, so far as radical measures are concerned.

REFERENCES.

¹ J. Schnitzler, *Mitth. a. d. Grenzgeb. der Med. u. Chir.*, 1908, xix, No. 2, p. 205; *Epitome in Surgery, Gynaecology, and Obstetrics*, vol. viii, p. 328. ² *University of Durham College of Medicine Gazette*, December 15th, 1906. ³ *Northumberland and Durham Medical Journal*, June, 1908. ⁴ *Surgery, Gynaecology, and Obstetrics*, vol. x, p. 154.

FURTHER EXAMPLES ILLUSTRATING CASES OF CHRONIC TOXAEMIAS AT VITTEL.

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IN July, 1910, I was able to bring forward a series of typical cases from my practice at Vittel during the previous season (1909). That paper led to a number of inquiries from many medical brethren, most of whom asked for more. Some varieties of chronic toxaemias were not represented, and I have tried in the present notes to, in part, fill up these gaps.

In practice at such a place one finds a large number of cases of a nondescript character, or at least appearing to be so to our imperfect knowledge or our insufficient means of determining in detail the loss of physiological balance or, in other words, the disease, which makes them appear to us as an unco-ordinated group of symptoms. Such indefinable cases represent a large part of one's practice; they do the cure, get relief of their symptoms, and go on their way contented. I do not feel justified in quoting such cases, as they would rather tend to confuse our minds than to push our observations and deductions onward along the path of precise knowledge.

I have therefore limited these new examples of cases, with one exception, to definite morbid entities, to illustrate one or the other ailment that is dignified by a name and presumed to be of known pathology. Like those of the first series, their treatment is based fundamentally upon two principles, which may be defined as:

- (1) The use of a vehicular water.
- (2) The compensatory relief of the usual work to the kidneys, allowing them to do an equivalent of new work.

1. The first is the employment of a natural saline solution, just suitable, a little hypotonic to the blood, characterized physiologically by rapid assimilation, and, if the supply is kept up, by equally rapid excretion. So intense is the affinity of the blood for this water that when large quantities are being drunk a tendency to constipation is produced, showing that the blood is even stealing it from the food bolus, and also showing, not infrequently, marked thirst for more by patients drinking considerable quantities daily.

2. The second fundamental principle is compensatory relief of the kidneys. If a given horse can draw a load of two tons of coal, that horse will not be able to draw an additional ton of potatoes. If we take off a ton of coals, we can then replace that amount by a ton of potatoes. This principle is the one we follow in utilizing a non-

chloride-bearing water, such as Vittel. If by a suitable diet we reduce the diurnal amount of sodium chloride, which we will put at 12 grams, to a practically accessible amount of 6 grams, we give our cellular structures a chance of giving up to the partly demineralized blood serum their store of uric acid and other toxic substances. At the same time our kidneys have a reserve energy for excreting their uric acid and other toxic substances to the equivalent of the diminished 6 grams of sodium chloride. This analogy will, I hope, make clear the mechanism of the lixiviating effects of such a mineral water as Vittel.

CASE I.

Mrs. C., aged 49. Blood pressure 140 mm.; capillary reflux 3; pulse 58; weight 72.200 kilos. When young had lung trouble, but has been gouty for three or four years, which, she says, is markedly hereditary. Last Christmas, after exercise, had dark water and a little pain, followed by rigors and giddiness, and finally renal colic. Shortly afterwards the stones dropped into the bladder under the influence of Vittel "Grande Source," which had been ordered her. In a few days she passed two small uric acid stones.

She is a "good eater," but temperate in alcohol; her digestion is good, excepting for a little flatulence; has been constipated for some time, and has a thoroughly inactive skin. She has a fair sleep, but is a great dreamer, and has a bad mouth in the morning.

CASE I.—Mrs. C. August 13th, 1910: Specific gravity 1015. Faint traces of biliary pigments, indican, and scatol. Purins 0.842. Extremely numerous pavement cells, some leucocytes, and very small crystals of uric acid. September 5th, 1910: Specific gravity 1027.5. Faint traces of true bile pigments, indican, and scatol. Purins 0.251. No deposits. V, Volume; S, solids; A, acidity; U, urea; U.A., uric acid; C, chlorides; P.A., phosphoric acid.

She came to Vittel feeling generally "down" or "seedy." The first urine analysis portrays the reason of this, as well as some remaining catarrh of the urinary passages. The urea-uric acid ratio is much disturbed. In addition to six glasses of "Source Salée" in the morning, and three of "Grande Source" in the afternoon, she had massage under water every fourth day, and daily general massage with Pelciba iodine jelly. The unpleasant feeling soon disappeared. At the end of the cure all the elements of the urine are raised in quantity, showing that both nutrition and elimination have been improved. Blood pressure fell to 125 mm.; weight had fallen to 69.750 kilos, or a loss of 2.450 kilos (5½ lb.).

I have given this case as one where the principal symptoms indicate that they were due to water starvation, with resulting toxaemia and deposition of uric acid in joints and urinary passages and fat in the tissues. Outside this, I think we can argue very little from the analyses, and this is a good example of clinical success but speculative failure.

CASE II.

Dr. H., aged 48. Blood pressure 135; capillary reflux 2½; pulse 60; weight 64.650 kilos. Has always suffered from irritability of the bowels, with constipation and occasional diarrhoea. Spasmodic calls and mucous diarrhoea very slight. His digestion is good, he does not suffer from headaches, but always dreams. He is obviously neurotic.

He came to Vittel because he suffers from tendinous fibrosis, which attacks any group of muscles that are put to any new or special use. He exhibits large nodes on tendon sheaths at wrist, etc.

The first urine analysis shows an excess of solids due to too much chlorides, acidity a little raised, urea normal, but marked retention of uric acid, so that the ratio of urea to uric acid is much disturbed with imperfect phosphatic assimilation.

He was ordered a relatively low chloride bearing diet, as free as possible from rich, xantho-uric-bearing foods, six glasses of "Source Salée" every morning, and three glasses of "Grande Source" in the afternoon, every alternate day a vapour bath and massage under water, to be followed by a rub down with Vigorax. Unfortunately, he was unable to afford but a little over a fortnight for the cure, notwithstanding which he declared

himself as feeling much better, and the nodules on the tendon sheaths at the wrist had much diminished. The second analysis, made while still drinking the water, shows a much greater approach to normal, a great rise in the elimination of

CASE II.—Dr. H. August 1st, 1910: Specific gravity 1018. Traces of biliary pigments. Indican fairly marked. Purins 0.628. Numerous pavement cells and some sodium urate. August 15th, 1910: Specific gravity 1009. Sodium urate, a few leucocytes, and epithelial cells. Purins 0.328. V, Volume; S, solids; A, acidity; U, urea; U.A, uric acid; C, chlorides; P.A, phosphoric acid.

uric acid, so that the ratio of urea to uric acid was restored, and even slightly temporarily reversed, and the phosphates were rising.

This case had been treated by all sorts of imaginable drugs with little good, yet the improvement at Vittel was striking, considering the short time in which it could be carried out.

I take this to be a case of toxæmia of rheumatic facies, probably of intestinal origin, that, were one able to carefully study the intestinal flora, might be definitely classed, and perhaps even treated by an auto-vaccine.

CASE III.

Major M. C., aged 42. Blood pressure 135 mm.; capillary reflux 4; pulse 70; weight 115.100 kilos; height 6 ft. 4 in.; is a big, powerful man. In 1902, in South Africa, had bad headaches, which continued till 1905, when albuminuria was detected. The following winter went to Egypt, and most of the summers since has gone to Contrexéville. He never had scarlet fever, but typhoid as a child, and also malaria. His father died of Bright's disease. He was put on vegetarian diet when his albumen was first discovered. His digestion is good; he now eats fish and chicken, and when abroad veal. He is a heavy smoker (pipe). His headaches are relieved by aspirin, and he takes Hunyadi for his constipation. Has had acute gout in toe.

CASE III.—Major C. August 13th, 1910: Specific gravity 1023. Albumen 2.08 grams per twenty-four hours. Traces of true and modified biliary pigments. Purins 0.696. Large uric acid crystals, some cells, large oxalate of lime crystals very abundant, and some granular cylinders. August 31st, 1910: Specific gravity 1022. Albumen 1.155 grams per twenty-four hours. Purins 0.789. Sodium urate very abundant; a few large crystals of uric acid in maces and rosettes, a few pure epithelial cells. No oxalates or casts. V, Volume; S, solids; A, acidity; U, urea; U.A, uric acid; C, chlorides; P.A, phosphoric acid.

The urine analysis made before the cure shows marked oxaluria, granular cylinders, and 2.08 grams of albumen in the twenty-four hours. The patient wished to be reduced in weight, and the following was therefore the dietary ordered: "Avoid raw and cooked fats, greasy dishes, fried articles, salt and salted foods, pastry and farinaceous food, sweets, gravies, sweetbread, liver, kidneys, rhubarb, sorrel, spinach, asparagus, vinegar, etc." This would hardly be considered an ideal diet for an albuminuric patient, as he was reduced to rather a highly nitrogenous diet, with some vegetables and fruit. Nevertheless his blood pressure fell to 120 mm. Hg; his capillary reflux from 4 to 3½, his pulse ranging from 66 to 70. His weight steadily fell to 111 kilos—that is, a loss of 4.100 kilos, or 9 lb., in eighteen days. Simultaneously his daily output of albumen was about half of that on his arrival. He took alternately daily a warm immersion bath for twenty minutes at

36° C. and a massage under water at 42° C. He felt much better. The marked acidity of the urine had become negative; the urea to uric acid ratio was restored.

At the height of his cure he was drinking seven glasses (half-pints or 300 c.cm.) of Grande Source before breakfast, which represents, amongst its other constituents, a considerable amount of lime salts, and yet his oxaluria and cylindruria had disappeared.

I have chosen this case as a type of one of the low-tensioned toxæmia albuminuric, and above all to illustrate how unfounded are Dr. Benjamin Moore's conclusions as to the injurious effects of calcareous waters in oxaluria. You will remark that this is a renal case without much hypertension, though no indications of any heart lesion could be found. I think we can interpret this case as one of imperfect metabolism and damaged renal structure which, by suitable lixiviation with a non-chloride bearing water, is soon restored to approximate normal, and might be so entirely if we physicians were not so often subjected to such curtailment of the time given to the cure by the patients themselves.

CASE IV.

Mr. H. N., aged 55. Blood pressure 290 mm.; capillary reflux 3½; pulse 58; weight 67.700 kilos. Has suffered from albuminuria for years, neuralgias, lumbago, and from time to time oxaluria and much uric acid sand. Is a temperate man, both in food and drink; somewhat sedentary. He had been a patient of mine before, and had been warned to limit his salt food, which will explain the low quantity of this in his urine analysis. The only immediate complaint he had was bilateral nasal neuralgia.

The first urine analysis, the day before the commencement of the cure, shows excessive assimilation, though the urea to uric acid ratio is normal; his chlorides are low from intentional

CASE IV.—Mr. H. N. July 27th, 1910: Specific gravity 1018. Albumen 1.80 grams per twenty-four hours. True biliary pigment; slight, but urobilin rather abundant, as also indican and scatol. Purins 0.802. Some rosettes of bicalcic phosphate, sodium urate, some crystals of uric acid, some leucocytes and epithelial cells. August 15th, 1910: Specific gravity 1022. Albumen 0.425 grams per twenty-four hours. Traces of reducible matters and of true biliary pigments. Indican and scatol marked. Purins 0.540. Some urates, uric acid, and a few leucocytes. V, Volume; S, solids; A, acidity; U, urea; U.A, uric acid; C, chlorides; P.A, phosphoric acid.

chloride starvation, and some phosphaturia is present. Biliary pigments and indican and scatol are much in excess.

As he was obviously the type of hypertension of renal origin, his blood pressure was frequently noted during the cure.

The following are the records:

July 25th. Blood pressure 290 mm.; capillary reflux 3½, pulse 58.
July 30th. Blood pressure 240 mm.; capillary reflux 3½, pulse 58.
August 5th. Blood pressure 245 mm.; capillary reflux 3½, pulse 58.
August 10th. Blood pressure 240 mm.; capillary reflux 3½, pulse 58.
August 14th. Blood pressure 215 mm.; capillary reflux 3, pulse 62.

This is a striking example of what can be done in reducing blood pressure in a hypertensivist of renal origin. Simultaneously with this his albumen fell from 1.80 grams per diem to 0.425 gram, or less than a quarter of what it was.

Curiously his urica has somewhat augmented, but there has been a tremendously lixiviating effect on the uric acid, while the phosphaturia has disappeared. What the kidney lesion may be is doubtful. I have notes that in 1909 he had some cylindroids and kidney cells in the urine, but in 1910 we could find no trace of either.

I have just seen the patient (April, 1911). His blood pressure has risen in part—245 mm., and also his pulse, 76—but he walked quickly uphill to my villa just after lunch.

CASE V.

Rev. J. W. R., aged 68. Blood pressure 165 mm.; capillary reflux 3; pulse 80; weight 83.580 kilos. Had psoriasis some years since. Has had nasal catarrh for many years, and lately bad rheumatism in arms and back. Last August had bronchitis.

Is a moderate eater, his digestion is fairly good, but he has suffered from dyspepsia, for which he got much advantage from Burroughs, Wellcome and Co.'s laxative tablets and 1 grain of calomel weekly. Has been a golfer for twenty years. He gets dripping wet from perspiration before the ninth hole is reached, and used to remain soaked till he changed for dinner. Three weeks since had a bad blow over liver from a motor car.

On his arrival he was markedly depressed and neurasthenic, said he was no longer able to do his work, talked of retiring, and was much troubled in consequence; doubted whether any cure could save him, etc., was too obese. The first urine analysis showed a very fair ratio between the different normal elements, though all were very much below the average. What, however, was unsatisfactory was the presence of 10.35 grams of glucose per diem.

CASE V.—Rev. J. W. R. August 13th, 1910: Specific gravity 1024.5. Glucose 10.35 grams per twenty-four hours. True biliary pigments sensible. Indican and scatol marked. Purins 0.391. Numerous crystals of uric acid in rosettes and isolated, some leucocytes. August 22nd, 1910: Glucose 3.10 grams per litre after a meal. September 1st, 1910: Specific gravity 1028. Glucose nil. Faint traces of indican and scatol. Purins 0.319. Large and small crystals of uric acid. Very rare leucocytes. V, Volume; S, solids; A, acidity; U, urea; UA, uric acid; C, chlorides; P.A., phosphoric acid.

His diet was suitably modified, and he soon worked up to nine classes per diem of "Source Salée." He had a massage under water every other day at 42° C., followed by a rub down with Vigorax.

Eight days later he felt much better, and we found 3.10 grams of glucose per litre.

On September 1st he felt quite fit to return to work. His blood pressure had fallen to 145 mm., with same capillary reflux and pulse. He had lost 3,280 kilos in weight, or over 7 lb. An analysis showed a marked improvement with a rise of all the elements. This is specially remarkable for the urea and phosphates, though the uric acid was still in part retained, especially as his diet was naturally rich in nitrogen. The chlorides insufficiency is due to privation in his diet. His glucose had fallen to less than a third in the twenty-four hours (3.10 grams).

This is a good example of glycosuria, neurasthenia, obesity, and visceral goutiness—four forms of toxæmia with some hypertension, all cleared up in a cure of less than three weeks at Vittel.

CASE VI.

Mr. T., aged 22. Blood pressure 145 mm.; capillary reflux 4; pulse 68; weight 64.100 kilos. An otherwise healthy young university man, has suffered from intense seborrhoea capitis for sixteen years, and for a long time a lichenoid growth extending out on the groins and some inches down the thighs and on to the buttocks. He has usually a very dry skin, excellent digestion, is a moderate eater, temperate, hardly smokes, and has his bowels regular.

CASE VI.—Mr. T. August 23rd, 1910: Specific gravity 1029. Traces of albumen and glucose. True biliary pigments sensible and traces of the modified, also traces of indican. Oxalate of lime in great abundance, but small. Uric acid crystals. Purins 0.352. V, Volume; S, solids; A, acidity; U, urea; UA, uric acid; C, chlorides; P.A., phosphoric acid.

The urine analysis shows a marked disturbed ratio urea to uric acid, intense oxaluria, traces of albumen and sugar, some biliary pigments, and traces of indican.

He was ordered Pelciba brilliantine for the head and Pelciba antiseptic nearly pure on the skin lesions. At the end of about ten days, when he was called away, both the scalp and the groins were nearly well, and later a letter from him says that he was practically cured excepting for some brown stains on the site of the lichenoid eruption. He had continued the

treatment by drinking Vittel water at home. A year later reports perfect health.

I might continue to cite a large number of other similar examples, or some almost miraculous cures, but these latter are always open to the accusation of *post hoc propter hoc*. What, however, is interesting is that a not inconsiderable number of cases drift here independent of medical advice and often contrary to it, and get better. Another section is formed by those sent by their medical advisers as a last resource in diagnostic and therapeutic despair. In nine-tenths of such cases a sentiment of gratitude and respect is engendered towards their medical advisers, which clinches the tie between patient and physician for the future.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, 1910, ii, p. 190.

An Address ON IODINE AS THE SOLE DRESSING FOR OPERATION WOUNDS.

DELIVERED AT A MEETING OF THE STAFFORDSHIRE BRANCH
OF THE BRITISH MEDICAL ASSOCIATION,

BY

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MEDICAL opinion concerning the utility of iodine as an agent in the production of asepsis has oscillated between contemptuous neglect and unqualified praise. At the present time its virtues are recognized on every hand, and its exceptional usefulness as a skin sterilizant needs no further emphasis, but reliance on its extended efficacy as the sole dressing to be applied to the operation wound from the date of the operation to the discharge of the case, is, I venture to think, a new departure.

This paper is based on the successful results of 31 cases treated by such a method, which, shorn of details, may be summed up as the treatment of the operation area by tincture of iodine, applied at intervals for the first few days, the incision being left exposed to the air, and only covered by the patient's night clothes.

My acquaintance with the use of iodine as the sole dressing for operation wounds dates back to thirty years ago, when I first remember seeing the practice of my father, who, besides being a hospital surgeon, was also public vaccinator, and it is vividly impressed on my mind that when the children came to have their arms inspected on the week following the vaccination, each arm which showed any signs of redness was painted over with a strong solution of iodine, and simply allowed to dry. This was invariably successful in preventing any spread of the cellulitis.

The first time I noticed iodine being used for the preparation and preservation of catgut was in America in 1907, whilst I saw it used for the sterilization of the skin of the abdomen in the gynaecological clinic in Vienna in 1908, and this method I adopted on my return.

Last year, immediately after my visit to the Annual Meeting of the British Medical Association in Birmingham to hear the discussion on the technique of wound treatment, it occurred to me, Why use dressings except iodine to operation wounds, and what is their use? and the more I thought of it the less reason I could see for them in suitable cases, on which account I at once proceeded to put the idea into practice, and I think that my results have fairly justified their absence.

Looking through the literature relating to the sterilization of the skin, I have been struck with the fact that special stress is laid upon the difficulty experienced in rendering the deeper layers of the skin sterile, and especially with the fact that any moisture of the skin means the detection of bacteria, where previously they were absent, if attempts had previously been made to discover them on a dry skin.

Although this stress is laid upon the action of moisture in macerating the epidermis and letting free the various micro-organisms, in no case does one find any special attention paid to the hair follicles, sweat and sebaceous