

BERI-BERI.

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That beri-beri is a disease of dietetic origin, a lacking of the Vitamin B, is now, according to a general consensus of opinion, more or less an accepted fact. It occurs principally among the rice-eating populations of India, Japan, the Malay Peninsula, and Philippine Islands, but is also found among the peoples of Newfoundland and Labrador, where a diet of white wheaten flour is consumed. In Europe under peace conditions, when a variety of foods is available and consumed, beri-beri is practically unknown; but in war time, when restricted diet is the rule, outbreaks of this disease are known to have occurred.

Beri-beri shows itself in the two well-known and well-marked forms. In the "dry-type," one of them, the picture is one of great muscular wasting, loss of sensation in the skin (anæsthesia), and ultimately even paralysis of the legs, sometimes of the arms, diaphragm and intercostal muscles. The peripheral nerves, the motor and sensory fibres, are involved, too. In the so-called "wet" type, the picture is more striking and evident, for the œdema which spreads itself over the limbs and trunk, and effusion into the serous cavities, cannot fail to catch the eye of the observer. There is accompanying dilatation of the heart, the right side especially, together with backward congestion of the liver and abdominal viscera. In such cases, heart failure must be looked out for, as it is frequently most sudden in its onset and not rare, while the death-rate is high.

As early as the year 1885, it was noticed that the eating of highly milled rice from which the germ and pericarp had been removed produced the disease, and that the cure and its prevention depended on the restoration of these milled products to the diet. Many Commissions were appointed to investigate the disease from time to time—and the researches of recent years have not been able to shake the old-established fact that human beri-beri is primarily due to a deficiency in the diet of the anti-neuritic vitamin. On the other hand, in the light of the work of McCarrison in India, we cannot regard the beri-beri problem in the tropics as being purely a question of polished or unpolished rice. It has been shown that human beri-beri may occur in spite of the presence of a certain amount of vitamin B in the diet. Where rice is the staple food, relatively under-milled rice may quite easily be associated with the disease, but very few human beings live on rice alone, and hence the ingestion of other food-stuffs prevents an absolute correlation between the incidence of beri-beri and the vitamin B content of the rice consumed. McCarrison points out that a century ago, long before the introduction of the machine milling of rice, beri-beri was endemic in India. He also shows that in India at the present time, the incidence of beri-beri does not exactly correspond to the type of milling in vogue. He believes that the supplemental foods in a diet are most important in determining whether beri-beri will develop or not, whatever may be the kind of rice used. For a man, a whole untouched rice diet does not supply the requisite amount of vitamin B, and it follows that where the diet consists entirely of whole rice,

unsupplemented, beri-beri may occur, and yet be absent where the diet consists of highly polished rice, well supplemented with other foods rich in vitamin B. The typical form of the disease begins insidiously with malaise, lassitude, loss of appetite, a dull ache in the stomach, tenderness over the pylorus and duodenum, headache, difficulty in breathing, and palpitation, often some œdema along the shin bone, and a peculiar sensation of heaviness in the legs. Soon a difficulty in walking sets in—and one morning the patient may wake to find he is not able to raise himself. If he can walk, the gait is most characteristic and peculiar, somewhat like that of locomotor ataxia, but more of the "high-stepping" type, the foot being raised with difficulty from the floor, brought forward with a jerk, and lowered abruptly. He walks with a support and often with the legs wide apart. He suffers from cramp, and the muscles are very tender. Sensations of pins and needles are also felt. The forearms may also be paralysed.

The heart is also markedly affected—being dilated especially on the right side. Palpitation and epigastric pulsation are common—as also pulsation of the carotids and veins of the neck. The pulse is usually much increased in frequency and low in tension. The great danger of the disease is death from sudden cardiac failure.

The tongue is clean—the throat may be congested slightly; digestion is quite fair, though a large meal will adversely increase the præcordial or epigastric distress. Vomiting, when it occurs, is a bad sign. The bowels are inclined to be costive, and the temperature normal or sub-normal.

In this condition the patient may remain, at times better, at times worse, for weeks and months, and may proceed very slowly to recovery, with deformities, of course, if paralysis remains, or may suddenly die of cardiac failure or from some complication.

œdema of the skin is more or less a constant symptom, but where the dropsy is generalized and marked, this is considered to form a separate clinical variety of the disease, known as the "wet" type. Whenever fever develops in a beri-beri patient, some complication usually arises, the most common being—tuberculosis, dysentery and malaria.

Treatment.—Principally symptomatic. The patient is marked "strict bed" and all care must be taken to avoid anything which is likely to bring on cardiac failure. Particular care must be taken if the patient gets up or moves about. A cardiac tonic, either strophanthus or digitalis is given, and amyl nitrite must be kept at hand should an attack suddenly come on. Oxygen is given during the attacks of dyspnoea. The muscles must be massaged to prevent disuse atrophy, and cramps. Electrical massage is also good. The diet must be good and nourishing—with plenty of protein and vegetables, and rice should be cut out. Careful nursing on account of the danger of heart failure and good hygiene is also necessary. It is also advisable to remove the patient from the place in which it is supposed that he contracted the disease. It is well to thoroughly disinfect with Clayton gas or sulphur and formalin any room in which beri-beri patients have been treated.—*From "The Nursing Journal of India."*

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