

yield helpful suggestion. Differences of race would be noted in the uniforms as worn in North or South India. We are seized by a sudden inspiration to be daring and challenge some of our older Training Schools to compete in an historical pageant of their various schools at the coming annual T. N. A. I. Conference.

OSTEOMALACIA

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OSTEOMALACIA is a deficiency disease occurring with great frequency in India, Japan and China. It is sometimes found in the Rhine Valley, the Danube Valley, Vienna, Parts of Italy, Switzerland, Flanders and the Balkans. It is very seldom met with in Great Britain, Canada or the United States and before coming to India I had never seen a case of Osteomalacia.

It seems to be widespread in India, although few cases have been reported in the extreme south. It is common around Bombay, Nasik, Calcutta, Patna, Burhapur, Agra, Rajputana, Central India, Kashmir and the cities of the Punjab, as Delhi, Simla, Lahore and Amritsar. Except for the Kangra Valley there is little in the villages of the Punjab. The Kangra Valley lies between the Swalik mountains and the Himalayas, between Simla and Dalhousie and in that small section there are innumerable cases. I made a survey of one small village near Palampur. 53.84 per cent of the people of the village showed signs of Osteomalacia or rickets. Among the Chumars the per cent was 76.14.

The term, late Rickets, is now frequently used instead of the term Osteomalacia, because it has been found that Rickets and Osteomalacia are the same disease, with the same causes, the same results and the same treatment, early rickets occurring in children and late rickets or Osteomalacia after the age of twelve or thirteen when pelvic symptoms may occur. Osteomalacia is chiefly a disease of women, but it also occurs in men but with much less frequency. In women it often begins at the time of pregnancy, even in women who, to all appearances, were strong and healthy. Unless preventive measures are followed, it will increase in severity with each successive pregnancy. Pregnancy, however, is not essential to the onset of Osteomalacia. Given the right conditions Osteomalacia might occur at puberty or following any disease which lowers the vitality of the body.

Pain occurs in the muscles of the arms, legs, ribs and lumbo-sacral region and is much more severe at night and in cold damp weather.

The pain of one patient may be confined to the lumbar region. In another, the shoulder or rib pains may be more severe. Another patient suffers most from ankle and wrist pains. There seems to be no definite rule, but the vast majority of patients complain that their severest pain is in the back, and this is the pain which is most difficult to get rid of. The pain disappears earlier from other joints, but this holds on tenaciously and may resist all treatment.

Pain is sometimes the first symptom of Osteomalacia, but in the majority of cases the first symptom complained of is one which only recently has been considered a symptom of Osteomalacia and that is tetany. Tetanic spasms of greater or less severity occur in hands and feet. They may be of such severity that the patient is unable to feed herself. It may be impossible to unclasp the hand during the interval of the spasm. The spasms may occur also in the muscles of the arms or legs, face or forehead. Barkat, a Mohammadan in-patient, has very severe tetany. She was eight months pregnant and had had spasms for four months. The muscles of her hands, feet, legs, arms and face contracted. During a seizure, and these seizures occurred several times daily, her hands would be so contracted that I could not open her fingers and the contraction of her face muscles made it impossible for her to speak clearly. During such an attack I could not understand what she was trying to say. Spasms occur in some patients only during the cold weather or after they have been bathing or washing their clothes in cold water. They may occur at any season of the year, however, and many times a day.

Deformity is practically always found in Osteomalacia patients. In early cases it is slight but it becomes more and more marked as the disease progresses. The pelvic bones are usually the first to change. The sacrum tilts forward and the pelvis becomes flat and contracted. Sometimes, the contraction at the outlet is so great that a vaginal examination is impossible. Sometimes, only one finger can be inserted for examination. Because of this deformity the patient may have great difficulty during labour and often it is only by means of a caesarean section or craniotomy that the child can be delivered. Sometimes, the deformity is so great that it is impossible to perform a craniotomy. This deformity may also interfere with marital relations.

Besides pelvic changes there may be marked deformity of the ribs, sternum and spine causing pigeon chest or humped back. The spines may be shortened decreasing the height of the patient or it may be curved in such a manner that the head is shoved forward until the chin rests upon the chest. The shafts of the long bones may be curved and in some cases the legs may be drawn up on the abdomen and extension of the legs impossible. There may probably be bossing and enlarged epiphyses.

An old severe case may show almost every symptom of deformity, great pain in all joints and several fractures. I am thinking now of a recent in-patient. Her deformity and pain were extreme. She could not lie

down. She could not sit up. She had to be propped in a semi-recumbent position. Her thighs were drawn up on her abdomen and could not be extended. The shafts of the bones of the lower legs were like curved blades and the knees were overlapping. Each arm had two old fractures that had united at right angles. Her chest was almost box-like in appearance but more irregular and her head rested on her chest. It required two nurses to hold her in a semi-sitting position while I took a snapshot.

The patient usually develops a characteristic Osteomalacia gait or waddle. In an early case this might be the first symptom observed. A more advanced case would have difficulty in rising. It might be necessary for her to assist herself with her hands. She puts a hand on each leg and gradually shoves herself up, until she is standing as straight as possible.

Osteomalacia is a deficiency disease in which the calcium phosphorus ratio in the body is upset, resulting in softening of the bone and deforming. This is due to

1. Lack of sunshine
2. Lack of Vitamins D. and C.

Lack of sunshine is not the cause of the great prevalency of Osteomalacia in the Kangra Valley. It is a Hindu district with few Mohammadans, therefore there is little purdah. The Rajputs observe purdah, but they are village people and their purdah does not exclude them from the sunshine but from the sight of man. In crowded cities, however, where sunlight does not penetrate to the living quarters lack of sunshine is a very important cause of Osteomalacia.

Lack of Vitamins C. and D. is the chief cause of Osteomalacia. The people of India are essentially cereal eaters. Their meals consist of large quantities of rice, chapattees and vegetables—vegetables boiled for hours until all vitamins have been destroyed. They lack foods which are rich in Vitamins C. and D. such as milk, eggs and fresh uncooked fruit and vegetables. They do not understand of what a balanced diet consists nor the importance of such a diet.

Then there is that large class which comes under the term Hunger Osteomalacia—those patients who never have an abundance of food and who seldom have sufficient to keep their bodies fit and healthy. The food they have is scanty in amount and also lacking in Vitamins C. and D.

Osteomalacia patients must therefore be supplied with Vitamins C. and D. Pure Cod Liver Oil is very rich in Vitamins D. There are Vitamins D. preparations now on the market which have none of the objectionable qualities of Cod Liver Oil but they are much more expensive. These are Ostelin, Radiostol and Vigantol. Cod Liver Oil in oz. i-oz. ii doses twice a day for six to eight months will work wondrous change in the patient. To this we add an equal amount of lime water. Milk and uncooked fruit and vegetables such as oranges, berries, vegetable juices, greens, etc., are necessary. The use

of liniment and massage has a stimulating effect on the muscles. To sum up—In the treatment of Osteomalacia the following are necessary :

1. Cod Liver Oil or a substitute.
2. Fruit and milk or meat or eggs.
3. Massage and liniment.
4. Sunshine.

I seem to place little emphasis on this last. Lack of sunshine is not one of the causes of Osteomalacia in a non-purdah country district such as the Kangra Valley. There is no scarcity of sunshine in any part of India, but there is the purdah system and the overcrowded unhealthy tenements of the cities. Many of the cities are desperately lacking in housing regulations and in the provisions of parks and open spaces.

I have been asked to prepare a paper on Osteomalacia with special reference to the part of the nurse in the treatment of Osteomalacia. Her part is largely educational. A patient need not remain in hospital for the treatment which should extend over many months. During the time she is in the hospital the nurse should teach her the necessity of a proper diet and the importance of persevering with the treatment. She should clear the patients' mind of the many superstitions regarding Cod Liver Oil, such as :

1. A person who takes Cod Liver Oil will never become pregnant.
2. A pregnant woman will have a miscarriage.
3. If she is pregnant the baby will become so large that delivery will be very difficult or even impossible.

She may be able to persuade a widow whose husband's re-incarnation may have been in the form of the special Cod fish from which the Cod Liver Oil was made that it is quite permissible to take Cod Liver Oil. Sometimes to explain that the Cod Liver Oil is imported or that the fish lived in foreign waters is sufficient, but more often considerable skill and tact are required before the poor widow can reconcile herself and her numerous relations to the advisability of taking Cod Liver Oil. Radiostol, Ostelin and Vigantol are very useful for the obdurate widow.

The nurse should massage the patient daily. This must be done carefully because the bones of an Osteomalacia patient are very brittle and fractures occur very easily. I have heard of a fracture occurring while a patient was being massaged, a fracture while a patient was being delivered and a patient turning over in bed has been known to break her arm in two places. Massage is a very important part of the treatment but too great care cannot be exercised in carrying this out.

Recently, I have added another duty to those of the nurse who is caring for Osteomalacia patients.

I was disappointed at the slow improvement Santi and Kunti were making. They had been in hospital for two months and although they had improved considerably and were quite pleased with themselves I

was far from satisfied. Najjo, a Chumar patient's improvement was tremendous. When Najjo was admitted at the same time as Kunti she could neither walk nor stand. It was almost impossible for her to change from a lying position to a sitting position or *vice versa*. Each time she was lifted she cried out with pain. Kunti and Santi could walk about. At the end of the first month Kunti could walk up and down the verandah about four times while Najjo made a single trip from one end to the other. At the end of two months Najjo could walk more quickly than Kunti and in every way showed greater improvement.

When Najjo was able to sit on the edge of her bed with her feet down, a great advance on the day when she sat crouched with the chin resting on her knees, whenever I passed her bed I would make her stand up and sit down several times. At first she protested that it could not be done, but I insisted and in a few days' time she was often seen standing and then trying to take a few steps. It seemed impossible to get her away from her bed. One day, however, clutching my arm with one hand and putting as much weight as she could on her stick I helped her to the middle of the room. There I left her. She was dismayed. There was no wall, nor table nor chair to support her. She had her stick, but her bed seemed miles away. She declared that she could never manage those three yards alone and begged me to help her.

Several times I tried this and soon I found that she was really making an effort to walk and get about by herself. Often I would take her hand and walk up and down the verandah with her. She loved to show off to other patients, explaining to them her condition on arrival and demonstrating the great change. She felt most important. She had been carried to hospital in a basket and after three months she walked to her home eight miles away.

The other two women, Kunti and Santi were not making sufficient progress. They were interested in embroidery and, encouraged them by giving them bright coloured threads. Although they could walk they seldom moved off their beds. It caused them some discomfort to move and they were keen about the sewing.

What was the reason that Najjo improved so much more rapidly than Kunti and Santi? They were having the same food, the same medicine and were massaged equally well. I puzzled over this and came to the conclusion that medicine, food and massage were not sufficient. The patient must have exercise so that the muscles, shrunken and stiffened from disuse might become flexible again.

Now each Osteomalacia in-patient must go through her daily dozen, using those exercises which will loosen the muscles of the knees, hips, back and shoulder. The exercises must suit the individual cases.

One morning four Osteomalacia in-patients were exercising in front of me on the dispensary verandah. They put their hands above their

heads and tried to touch the toes without bending the knees (to the eyes of a drill master it would have been a very poor demonstration). An old type village women came along as they were doing it and thought that they were salaaming me. Not to be outdone by these younger women she joined in the exercises and each time she bent over called out in a loud voice, salaam!

There are numerous suitable exercises. One was to have the patients pick up objects from the floor and place in my upraised hand. Leg extension exercises are useful too. At first Kunti could raise her foot only six inches. Within two weeks' time she could raise it almost three feet. They love these exercises and were very disappointed if any evening I had not time to play with them. The spirit of competition became very keen.

Hundreds of cases of Osteomalacia and rickets go untreated. This is largely because such symptoms as bossing, enlarged epiphyses and tetany are not recognized. It is only when there is much pain or deformity that aid is sought. A public health nurse, in fact, any nurse should be quick to observe these symptoms and advise the patient to undergo treatment.

What nurse is not interested in prevention of disease? One of the nurses of our Mission wrote a little Osteomalacia play. The Educational Department of the Punjab has sent copies of it to every girls' school in the district asking that it might be given by the school children. There are many other ways of instructing the people about Osteomalacia and I am sure that wherever it occurs the nurses of those districts are putting forth every effort to stamp it out.

Sinusitis

If other measures have failed to bring relief in obstinate sinusitis try Antiphlogistine. Every physician knows that success in the overcoming of this affection depends on free drainage and ventilation.

Antiphlogistine has hyperaemic, osmotic and relaxant powers; its application over the affected regions (1) relieves the pain; (2) dissipates the congestion and (3) establishes drainage. Pressure, due to accumulated exudates is relieved and toxic influence upon nerve terminals, due to the presence of pus and other products of inflammation is ended.

Physicians are invited to write to the Denver Chemical Manufacturing Co., 163 Varick Street, New York, for samples and literature.

"There is a power that overcomes evil; to will is to have it."

"Without any bodily means God communicates His Essence to our minds."

"Spiritual sight is a power, and those see most nobly who believe in a power greater than their own"; "man can open his heart to the Divine influence, and infinite possibilities are open to one determined to have the best life can give."

"Impossible is not a happy word; no good can come to those who have it often in their mouth"; for no one has yet fathomed the possibilities of human nature.

"More and more do we feel we are the creatures of something behind ourselves which speaks through us"; yet the Majesty of God's Presence hidden from us by the splendour of His Light does not appeal to the blunt faculties of man's mind.

"Do you believe in the Holy Ghost."