

nurse stated that she knew of no possibility of this having occurred. As noted at the time, the bones of the head were not normal, and since then I have read in Owen's "Surgical Diseases of Children" that Marion Sims and Hartigan "ascribe this disease to extravasations at the base of the brain and medulla, the result of inward displacement of the occipital bone, there being in most cases a definite overlapping of the lateral margins of that bone by the posterior border of one or both parietals." This was present in the case under discussion, and also the right parietal bone appeared to overlap the left, and all were unusually ossified and thickened. The brain could not expand as in the pliant skull of a normal child. The course of the disease was fairly typical, except that at times the spasms became more of an eclamptic nature, being clonic. As regards the treatment, at first this appeared partly to relieve the symptoms, but soon a relapse occurred and the course was steadily downwards. It is interesting to note that the medicine when given cold produced a spasm, but that when given warm it was swallowed, like all the milk, fairly easily and without any production of spasm. Unfortunately, no post-mortem examination could be obtained.

Sewan, Sarun, Bengal.

SCURVY RICKETS.¹

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BEFORE bringing forward the notes of three cases of scurvy rickets which I have lately had the opportunity of seeing, I would make an observation with regard to the association of the two diseases. I imagine that no medical man considers scurvy rickets to have a distinct entity; it is merely a fortuitous combination of two diseases, either of which can, of course, exist separately. The only point upon which I wish to remark is the peculiarity of infantile scurvy being more frequently found in rickety children than in children who are not rickety. The explanation appears to be a simple one. The great number of artificial foods now sold, upon which infants who should be fed at the breast are brought up almost from birth, are invariably deficient in the antiscorbutic element which is essential, and it appears to be exceedingly probable that cow's milk, particularly that obtainable in large towns, contains but a small proportion of that element, so that it is not surprising to find that the rickets in which improper feeding plays so important a part etiologically is accompanied in certain cases by scurvy. On the contrary, the wonder is that so few children suffering from rickets also show symptoms of scurvy.

CASE 1.—An infant twelve months old was first seen in consultation in April, 1892. The history given was that he had never been fed at the breast, but had been brought up at first on milk-and-water from a bottle and latterly, on account of diarrhoea, had been fed entirely upon a prepared food. He had recently cut two teeth, had not attempted to walk, and had always perspired profusely about the head during sleep. For the fortnight previous to my seeing him he had seemed to be very unwell, moaning during his sleep and crying when disturbed. During this time it was observed that he kept his limbs very still and that they were becoming swollen. He was an exceedingly pale and flabby, though not emaciated, child, with distinct indications of rickets, such as beading of the ribs, enlarged radii, and widely open anterior fontanelle. The left thigh and leg—the parts chiefly affected—were throughout their whole length uniformly, though not very greatly, swollen, the swelling being firm and tense, and the skin pale. The surface appeared to be hot to the touch, especially in the lower part of the leg. The right thigh was apparently normal, but the right leg presented a swelling similar to that of the left leg, though in a less severe form, extending upwards from the ankle for about one-third of the length of the leg. In the upper extremities the forearms were also similarly affected, but not to the same extent, a somewhat cylindrical swelling extending from the wrists upwards for a short distance. The upper arms were not swollen.

The child cried so bitterly during the examination that it was impossible to make it a very thorough one. It was ascertained that there were no hæmorrhages, either in the skin or from any mucous membrane. The urine was not examined. The gums were not spongy or ulcerated. For treatment lead-lotion was applied to each of the limbs, and the juice of one orange was given daily, together with cod liver oil for the rickets. Three days later the child seemed to be much better; the swelling and tenderness of the limbs had diminished considerably, the left leg and thigh still remaining the most swollen. Ten days later still some thickening in the lower third of the left femur and a little in the lower third of the right tibia were to be made out, but the uniform swelling of the limbs had entirely disappeared. It was evident that the thickening which remained was immediately around the bones mentioned. The child had recommenced to throw his limbs about in a natural manner and appeared to have no pain whatever. From that date he steadily recovered and is, I believe, now quite well.

CASE 2.—An infant ten months old was brought to the Clinical Hospital for Women and Children in April, 1892. She had been put to the breast for one month and subsequently fed on prepared food with equal parts of milk and water. She had snuffed at the nose when about a month old, but no rash had been seen. The mother had been confined once before, when she was delivered of dead twins. The child for about three months had not thrown out her arms and legs as previously, and during this period her legs above the ankles were observed to be swollen at times, though the swelling would go down again in a few days. Latterly, however, it had persisted. Five weeks before I saw her an extravasation of blood appeared in the right upper eyelid, which was quickly followed by one in the lower lid; a few spots, probably purpuric, were seen about her arms, and her nose began to bleed almost daily, sometimes two or three times in the day.

A fortnight before she was brought to the hospital the forearms began to swell above the wrists, and an ecchymosis appeared in the left lower eyelid. Three days before she came the upper lid became ecchymosed. The infant was obviously rickety; she had no teeth, had beads on the ribs, and perspired freely in the head. There was nothing to support the suspicion of congenital syphilis. She had ecchymoses in the eyelids of both eyes, the upper lid of the left eye being reddened and puffed out by a large effusion, and the lower lid and both lids of the right eye were black in patches. The child was very still, but cried the moment she was touched for the purpose of examination. The legs were uniformly swollen above the ankles, the swelling being firm and evidently very tender. There was no heat; the skin was pale and did not pit upon pressure. The forearms just above the wrists were similarly affected, that of the right side being more swollen than the left. Nothing abnormal was observed about the thighs or upper arms. There were no purpuric spots to be found, and the gums were healthy. The urine was not examined. She was ordered the same treatment as in the first case. When seen a week later her nose had bled once only; she looked much better and bore an examination of her limbs fairly well. The swelling had subsided considerably. The ecchymoses in the eyelids had disappeared, with the exception of one black patch in the right upper lid and a smaller one in the left lower lid. A fortnight later still she was much improved. There was some thickening to be felt about the left tibia, above the malleoli, and in the radius of the right forearm, just above the wrist, but all other symptoms had subsided. The nose had bled twice since the previous visit. I saw her again in July, when she looked very well. She had cut four teeth. All the thickening about the bones had disappeared. In October I made another note to the effect that the rickets were very much better and that she had shown no further symptoms of scurvy.

CASE 3.—An infant ten months old was admitted into the Clinical Hospital for Women and Children in November, 1893. He had been fed on prepared food and corn-flour from birth, as the mother was compelled to go out to work. There was no history of syphilis, and the child had not snuffed. He was a strong, healthy infant at first, but pined away, and when six months old he suffered from diarrhoea, which reduced him greatly. Three weeks before he was brought to the hospital the left leg was observed to be swollen and subsequently became blue, as though bruised, and a week afterwards the right eye protruded and the eyelids became dark red. When admitted he

¹ A paper read before the Pathological Society of Manchester, Feb. 14th, 1894.

was seen to be a small and weakly child, with a sallow complexion and feeble muscular development. He weighed 14½ lb., the usual weight of a child of his age being 23 lb. The two lower central incisors were just erupting. The gums were not spongy or ulcerated. The ribs were beaded, and the abdomen was tumid, but otherwise normal. There were signs of bronchitis, especially about the base of the right lung, and the temperature was 99.6° F. The left leg was much swollen from the knee down to the ankle and was tense and brawny to the touch. The skin in the front was greatly discoloured by blood extravasation. Pressure evidently caused acute pain. None of the other limbs appeared to be affected. There was proptosis of the right eye, with extensive ecchymosis into the upper eyelid. The urine, on being examined, was found to contain a little blood. The child was put on orange juice, milk, and beef-tea, and lead solution was applied to the affected limb. At the end of a week the eyeball had ceased to be prominent; the swelling of the upper eyelid had disappeared, leaving only a slight tinge of yellow. The left leg was less tense, and the discolouration of the skin was almost gone. No fresh extravasations or swellings had occurred. No blood was found in the urine. The temperature had varied between 98° and 100°. Unfortunately at this stage the bronchitis present when the child was admitted grew worse, symptoms of broncho-pneumonia developed, and on the ninth day after admission the temperature rose to 103°. The back of the right lung became almost absolutely dull to percussion, and death took place on the twelfth day, the temperature just before death rising to 109.4°. A partial necropsy was made, and the tibia and fibula of the left leg were removed. The periosteum of the tibia upon being incised was found to be greatly thickened and vascular. It stripped easily from the bone, being separated from the shaft by a blood-clot about one-eighth of an inch thick in its thickest part, which wrapped the latter for some part of its circumference, extending upwards and downwards for nearly its whole length, its thickest part being in the upper third. The surface of the shaft was quite smooth. At the upper end it appeared to be partially separated from its epiphysis. The lower end was not separated. The muscles were for the most part dark-coloured from effusion of blood into them but there were no clots. The periosteum of the fibula appeared to cling to the bone normally and was not thickened, but upon incising it and stripping it off a very small patch of effusion appeared at its upper end upon the outer side. There was no separation of the epiphyses. There were no swellings to be felt about any other bones, and the examination was not carried further.

Remarks—These three cases show varying degrees of severity, though not the stage at which the disease in itself would prove fatal. In the first case the extremities were swollen, but without further symptoms of hæmorrhage. In the second case the extremities were swollen, and there was extravasation of blood into the eyelids, together with a few purpuric spots in the skin and bleeding from the nose. In the third case there was swelling of the left leg with extravasation of blood into the skin. There was also extravasation of blood into the eyelid and into the areolar tissue of the orbit, causing proptosis, and finally there was hæmaturia. In none of the cases was crepitus obtained in the bones, nor were the gums spongy or ulcerated. In Dr. Barlow's table² the gums were affected in fifteen out of thirty-one cases. In each case the child had been deprived of breast milk (with the exception of one who had it for a month only) and had been brought up on improper food, of which cow's milk does not appear to have formed a large part.

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BRONCHO-PNEUMONIA AND CLIMATE: A LOCAL STUDY.

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OF all the diseases to which flesh is heir in the Rossendale Division of Lancashire the most numerous are those of the pulmonary organs. Rarely does an infant or young child escape an attack of broncho-pneumonia. Many elderly persons die from bronchitis, and acute pneumonia claims its victims every year,

and, indeed, is so well known by the inhabitants of the district to be almost uniformly fatal that it strikes terror into the minds of the relatives and friends of the sufferer. Having during the last eleven years treated a very large number of cases of broncho-pneumonia in children—so large a number that, if I stated them in figures, I should be accused of exaggeration—I have gained a knowledge of the symptoms, progress, and treatment of the disease which will justify me in writing about it. It is most prevalent during the months of October to April inclusive. The valley in which I dwell, varying from 400 to 900 feet above the sea level, runs (roughly speaking) from north-west to south-east. It is narrow, with the higher hills on the westerly side about forty miles distant from the sea, and the bend of the trees and meteorological observations—of which I have a complete series—show that the prevailing winds are from the south-west; there is consequently a high rainfall, often fifty-two inches, annually. The soil is thin, derived from the sandstone rock and years of decayed grass, with a thick and very stiff subsoil of clay. During the period from October to April the hygrometric readings of the wet and dry bulb thermometers are nearly uniformly equal, the wet bulb very rarely reading more than three degrees lower than the dry bulb, and often only one or two degrees lower. This indicates a moisture-laden atmosphere, nearly to saturation and prevailing for a long period, and although the temperature is rarely very low, even in the depth of winter, the air feels chill and damp during these months.

I have entered into these particulars more fully because I am convinced that this state of chilly moisture, due to the land being cold and wet in consequence of the stiff clay retaining the surface water in the soil, is the predisposing cause of the great prevalence of bronchial and pulmonary complaints in this district. The moist air, combined with the comparatively high mean temperature which we have here, favours the growth and perpetuation of the cause of the disease, whatever it may be. It attacks children of all ages, from a few weeks old up to about six years of age. It is nearly always epidemic. The duration of the attack is nearly always eight days. There is a marked tendency towards recovery in children who are carefully treated and who are not debilitated by improper feeding or other cause.

I shall perhaps be pardoned if I enter more particularly into the symptoms. The child has premonitory symptoms for about two or three days before the onset of the attack; these symptoms may be defined vaguely as malaise. The child is hot and cross, with slight cough and not much appetite. There then follows high fever, with a rigor in older children and with a convulsion in some of the younger children. One lung only is affected at first, there being fine crepitations heard during inspiration, but in nearly all the children the other lung quickly becomes involved; there are then heard mucous râles over the whole chest, with quick breathing, hard, painful cough, flushed face, and anxious countenance, the skin being dry and hot for one or two days, but afterwards moist and even wet with perspiration. In cases which end favourably, on the seventh day the pulse-rate diminishes, the temperature falls, the child sinks into a sleep of several hours' duration, and on the eighth day the severity of the symptoms is so greatly ameliorated that recovery quickly follows.

After much experimental treatment I have found the best to be the administration, during the whole of the feverish stage, of a combination of salicylate of soda in doses of from two grains and a half to five grains, according to the age of the child, with ipecacuanha wine in emetic doses, every two hours. The salicylate of soda reduces the fever and, I believe, cures the disease; the emetic doses of ipecacuanha wine are necessary to clear the lungs of mucus and thus prevent death from suffocation. After the crisis on the eighth day there is frequently a necessity for a change of treatment in those cases where there is much phlegm, and to these patients I give dilute sulphuric acid with ipecacuanha wine, and I have rarely had cause to be disappointed with it. The room should be airy, with frequent changes of air, but without draughts. It need not be hot; some of my patients have recovered best in cool rooms, where fresh air was most plentiful. One patient in particular struck me as remarkable in this sense. The mother said she could not bear to be "closed up," and in a cottage of one room the child lay, not exposed to draughts, but to the full and free air of an open outer door during the whole of her illness. I remonstrated at first as it was a very severe case, but seeing that the child was recovering better than some did in hot, closed-up rooms, I ceased to do so and learned a lesson which I have found to be very useful, with some of the more

² Transactions of the Royal Medical and Chirurgical Society, vol. lxvi., 1883.