socket was found to be completely lined with a moist white skin and the marble was easily and perfectly retained in it, leaving just the proper amount of its surface visible, so that the palpebral opening corresponded in size with that of the sound side. But the socket lay too far outwards towards the temple, and, when the marble was in its place, looked like a tumour just within the outer margin of the orbit.

To remedy this the patient, when the healing of the socket was complete and had reached a state of permanent quiescence, was again put under chloroform on October 26th, 1891. The marble was removed, and the index finger of the left hand passed into the socket. Guided by this finger within, the outer, lower, upper, and, to some extent, the back parts of the socket were subcutaneously detached from their connection by a slender tenotome entered from the facial aspect of the lids at convenient punctures, and the detachment was proceeded with until the new socket came, as it readily did, to occupy its just position in the centre of the orbit, and lie symmetrically with that of the normal right eye. The marble was then reintroduced, and the dressing continued on the same lines as after the former operation. The marble, which had a circumference of almost $2\frac{1}{2}$ inches, remained in position save when it was frequently removed and washed, until it was certain no further changes were to be anticipated in the socket. From the first the result was satisfactory, and it became clear that a good and symmetrical socket had now been obtained, which harmonised with the healthy side, and was neither too prominent nor too sunk. The socket now showed when the marble was removed a smooth, moist, white, spherical cavity, lined with skin, while the remnants of the former conjunctival sac had shrunk to a small pit or dimple, just large enough to contain a grain of barley, and lying behind the caruncula lacrymalis.

In November, 1892, a year after the second operation, wax models of an artificial eye, and a Mules's artificial vitreous of suitable size, fitted with a projecting point of wax to lie in the old conjunctival sac, and thus steady the eye, were introduced in place of the marble, and it was decided that all was now ready for the fitting in of an artificial eye.

By Dr. Davidson's advice, the patient was sent to Mr. Atkinson, London, with instructions and her models. Mr. Atkinson took great pains to supply her with a suitable prosthesis, and succeeded in doing so without requiring to utilise the old conjunctival pit for steadying it. On her return home the result was found to be very satisfactory indeed, as is shown by the photographic likeness (Fig. 3), from which it

Fig. III.

is clear that, while further experience of the operation will doubtless lead to even better results, the plan adopted has resulted in a distinct success.

EXTRACT FROM A CLINICAL LECTURE

ON INFANTILE SCURVY IN SURGICAL PRACTICE.

By HOWARD MARSH, F.R.C.S.,

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In his very able and instructive Bradshaw Lecture recently delivered before the College of Physicians, Dr. Barlow has given a full and clear account of all that is at present known of infantile scurvy, or, as it has been termed, scurvy rickets. As the medical aspect of the affection has been thus completely dealt with, it may be useful, while Dr. Barlow's essay is still fresh in the memory, to direct attention to infantile scurvy as it presents itself in surgical practice. The ground for doing so lies mainly in the fact that, unless great care is exercised there is considerable danger that this condition may be mistaken for something entirely different, and that thus serious errors of treatment may occur. That this should be the case will excite no surprise when it is remembered:

1. That the disease is rare, and that many practitioners have had no opportunity of seeing it.

2. That the circumstances under which it occurs are apt to be misleading, for, as Dr. Barlow and others have pointed out, it is not amongst the poor, who generally nurse their infants at the breast, and, later supply them with a mixed, though not in all ways a very suitable, diet, that infantile scurvy is most often met with. It is most frequently seen (where, *primâ facie*, it would be least expected) in the families of the well-to-do, for in this class some mothers, unable to nurse their offspring, or anxious to escape from the drudgery of doing so, and believing that the various proprietary foods are a complete substitute for breast milk and fresh foods, feed their children for months together entirely on the former set of preparations.

3. That the likeness which cases of infantile scurvy often present to other forms of disease may be, at least at first sight, very deceptive. The following, so far as I have seen, are the surgical affections between which and infantile scurvy diagnosis may be at fault:

1. *Fracture of the Femur.*—A male infant, aged 13 months, was reported to have fracture of the left femur, for which a long splint had been applied. A large bruise on the hip was regarded as evidence, along with suddenly developed and severe pain in the thigh, that the nurse had let the child fall. There was, however, no fracture, but the child, as indicated by its pale and waxy appearance and spongy gums, was evidently the subject of scurvy. A considerable firm swelling, such as might result from the presence of callus, surrounded the lower end of the femur. This swelling was no doubt produced in the manner described by Dr. Barlow. It was due to the osseous material which had been thrown out by the periosteum after that membrane had been raised by hæmorrhage between it and the shaft of the bone, and was "analogous to what is found round the base of a recovering cephalhæmatoma."

Although the diagnosis of fracture in this case was erroneous, it must not be forgotten that spontaneous fracture of the shafts of the long bones, though it is rare, is yet one of the most striking results of infantile scurvy. In a very remarkable instance recorded by Dr. Colcott Fox, several of the long bones presented one or more fractures through their shafts. The preparations from this well-known case are in the museum of the Westminster Hospital. Fracture depends on the weakening of the shaft as the result of hæmorrhage into the medullary canal, and the consequent rarefaction or excavation of the bony tissue. In Dr. Colcott Fox's case the bones looked as if they had been "broken up by being run over." This form of fracture, involving the shaft of a long bone, must not be confounded with the separation of the epiphyses, which is much more frequently seen.

2. *Infantile Paralysis.*—A child, 11 months old, was believed to have severe infantile paralysis. Both the lower limbs

were so powerless that when the patient was held up they dangled as if completely paralysed. When the child was in bed they remained motionless in a flexed and abducted position. This condition had been suddenly developed about a week previously. The patient was easy when at rest, but when the limbs were moved he screamed with pain. He was pale and cachectic, and had had free nose bleeding twice in the previous fortnight. On examination there was found considerable swelling around both femora and one tibia, the result of subperiosteal hæmorrhage.

3. *Sarcoma of the Femur*.—A child, 18 months old, was suddenly attacked with severe pain in the right thigh. A surgeon who was called in diagnosed a periosteal sarcoma, which he believed must have been growing for some weeks, but had been overlooked. The view was also formed that the sudden pain and the development of swelling were due to injury, perhaps producing fracture through the growth accompanied by hæmorrhage into its substance.¹ Two days later, however, examination brought out the following conclusive evidences of infantile scurvy: spongy condition of the gums, multiple "bruises" under the skin, and hæmorrhage under periosteum of the opposite femur and of both tibiæ.

4. *Sarcoma of the Eyeball*.—An infant, nine months old, had what was regarded as a malignant growth, producing marked proptosis, a condition which it was feared would necessitate extirpation of the globe, and the removal of any growth that might be found at the back of the orbit. On examination, however, all the structures of the eye were found to be normal; and, on widely separating the lids, extravasated blood was to be seen behind the conjunctiva, indicating that hæmorrhage had occurred into the orbit behind the globe in the manner described by Dr. Barlow. The child was pale and waxy in appearance, and had a "black eye" on the opposite side, of which the mother could give no account; while a week before she had been alarmed to find a considerable amount of blood upon the pillow, which she thought had come from the child's throat. The patient was markedly rickety. No teeth had come through, and the gums were free from spongy swelling. In a second case of proptosis and subconjunctival hæmorrhage in an infant in whom new growth was at first suspected, the opinion formed by Dr. Wyatt, of Clapton, that the case was one of infantile scurvy, was confirmed by the result; for under treatment the patient, as in the preceding case, rapidly and completely recovered.

5. *Sarcoma of the Gums*.—Mr. Pick gives me permission to refer to a remarkable instance of infantile scurvy, chiefly involving the gums, which he related in his College lectures of the present year. The case occurred some years ago, and before the publications of Dr. Cheadle and Dr. Barlow on the subject. The patient, a male infant aged about 12 months, was suffering from an illness the exact nature of which was obscure. He was so anæmic and emaciated that he appeared to be dying. "The most remarkable feature in the case was the appearance of the child's mouth. Dark red firm masses, evidently projecting from the gums, protruded from the mouth between the lips. These were very vascular, and bled freely when touched. The firmness and vascularity of the growth rather suggested that it might be a case of sarcoma, but the child was in such an extremely exhausted condition that no protracted examination could be made." Nothing in the way of operative interference could be undertaken, and only palliative measures were suggested. The subsequent history of the case, which, as it is now easy to see, was one of infantile scurvy, is well worthy of being recorded. That same afternoon the mother by chance left a bunch of grapes on the child's bed. The patient ate one with evident relish; and as it was thought that he was dying, and the grapes therefore could do him no harm, and as he took them with avidity, he was allowed to suck several others. Next day he was better, and his mother, convinced that the improvement was due to the grapes, continued the treatment. The child now began to take food, and soon completely recovered. Heubner² alludes to a similar condition of the gums, and

remarks that in some cases hæmorrhagic tumours of the gums are so large that they hang out the mouth.

Should the symptoms which are observed, and which will all be found in Dr. Barlow's lecture, raise the suspicion that the case is one of infantile scurvy, an inquiry as to the diet which has been employed will throw valuable light upon the diagnosis. If it is found that the infant is being fed at the breast, or is taking a good amount of fresh cow's milk, the suspicion of scurvy is, in all probability, indeed almost certainly, erroneous. But if proprietary foods have been exclusively or even largely used, the probability that the child has scurvy will become very strong. The effect produced by the administration of an appropriate diet is very striking. In a single day, in some instances, improvement can be observed, and in the course of three or four days the child is obviously well on the road towards convalescence, so that all doubt as to the nature of the illness is at an end.

A case which came under notice in the course of the present year seemed to indicate that infantile scurvy may lead to the development of angular curvature of the spine. In the instance referred to, a child aged 10 months, who had apparently been suffering with scurvy for nearly twelve weeks, was extremely weak and cachectic. Under the periosteum of both femora and both tibiæ very large hæmorrhages had occurred. The lower third of the right thigh was, as the result, so much swollen that it appeared at first sight to be occupied by a large sarcomatous growth. There was considerable swelling of the right leg, and swelling also, though much more limited, of the left thigh and leg. On examining the spine, there was found a very distinct angular curvature low down in the dorsal region. This had appeared in the course of the illness, though at what precise date was not known. The patient died a few days later, but no *post-mortem* examination was obtained. It is therefore impossible to be sure on what the angular curvature depended. It seems, however, not improbable that it was the result of changes going on in the body of one or more of the vertebrae. In the long bones it is well known that the hæmorrhage which collects beneath and widely separates the periosteum takes place mainly from the rapidly-growing tissue of the diaphysis, which lies beneath the epiphyseal cartilage. This was very clearly stated by Mr. Pick in his lectures at the College of Surgeons. He says "the growing tissue at the ends of the shafts of the long bones is in most cases the principal, as well as the primary, seat of extravasation of blood in scurvy rickets in infants and quite young children." This vascular tissue is often entirely broken down, with the result that the epiphysis is completely detached from the shaft. It seems reasonable to believe that hæmorrhage may have occurred into the cancellous tissue of the body of a vertebra immediately beneath one of the epiphyseal plates, and have broken up the bone tissue in a manner similar to that just described as occurring in the ends of the long bones.

It would appear that surgical interference can very seldom be either necessary or advisable in the treatment of infantile scurvy. It is true the periosteum is often widely separated from the bones by a large quantity of extravasated blood. To some it may seem right that this should be at once removed by free incision and irrigation, or other means. Such a proceeding was, indeed, undertaken in an extreme case by Mr. Herbert Page, and the patient recovered. As a rule, however, to which there are probably very few exceptions, no operative treatment should be adopted; for, when the diet of the patient is corrected in the manner described by Dr. Barlow, the lesions produced by infantile scurvy are repaired with a rapidity which leaves nothing to be desired. In many cases in which the epiphysis has become separated from the shaft it has, as recovery under a corrected diet advanced, become reattached, and complete reunion has occurred.

A MINISTER OF HEALTH FOR FRANCE.—On October 31st M. Vaillant introduced into the French Chamber of Deputies a Bill providing for the creation of a Ministry of Labour, Hygiene, and Public Assistance. It will probably, however, be some time before France has actually such a Minister. There are several obstacles in the way, the most formidable of which appears to be a difficulty in respect of money.

¹ Northrup and Crandall met with a case in which swelling, due to infantile scurvy, was mistaken for sarcoma of the lower end of the femur.

² Oppenheimer mentions a case in which enormous swelling (hæmatoma) of both eyelids was present. *Deut. Archiv f. d. Med.*, Band xxx, 1892.

³ *Jahrbuch für Kinderheilk.*, vol. xxxiv, p. 361.