recovery of the muscle would have been a matter of at least many months.

I publish the case partly for its general interest, as showing vicarious muscular supply after nerve injuries, and partly for its special interest, as showing what may be expected in favourable cases in the way of recovery of function in cases of atrophy of the deltoid.

REFERENCES.

¹ Létévant, *Traité des Sections Nerveuses*, Paris, 1873. ² *Ibid.* Phénomènes physiologiques et pathologiques consécutifs à la Section des Nerfs principaux du Bras, *Lyon Méd.*, No. 21-22, 1869. Virchow-Hirsch, *Jahresbericht*, 1869, Bd. 2, pp. 291, u. 321.

CASE OF ACUTE RACHITIC CURVATURE OF TIBIÆ BACKWARDS.

[WITH SPECIAL PLATE.]

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As regards the rachitic changes in the lower limbs, although the enlargements of the upper end of the tibia and the lower end of the femur occur next in order of frequency to the lower end of the former bone, we do not find the upper end of the tibia nearly so often bent as its lower extremity. While it is very rare to meet with such a condition as the present one of acute yielding of the bone directly backwards below the line of junction of its upper epiphysis, we sometimes find the upper end of the shaft projecting somewhat backwards and outwards at a point just below the tuberosities. Indeed among the numerous casts of rachitic deformities in the museum of the City Orthopædic Hospital there is no example which at all approaches it in severity.

The girl (E. G.), who was aged 17 years on admission, but looked no more than 12, had had somewhat severe rickets during infancy. Her father and mother were quite healthy, and her three brothers, residing in the United States of America, older than herself, had no affection of any kind. She did not attempt to walk until 2 years of age, and at the age of 3 it was noticed that her legs began to be crooked, and she was treated for rickets in a New York hospital. An apparatus was fitted to the spine, but no splints were applied to the legs, as she was told the condition of these would get better of itself in time. After her arrival in England her mother took her at the age of 8 to the Evelina Hospital for the bending inwards of the knees, but no splints were applied during the twelve months she attended there. The patient then came to this hospital under the care of my late colleague, Mr. E. J. Chance, who applied first of all straight wooden splints to the lower extremities, and then for the last three years steel mechanical appliances.

The patient then came under my charge, and it was clear that although the steel supports had effected much in correcting the valgus condition of the knees, they did not seem to have benefited the unusual curves of the legs which were now presented, and had up to this time been progressive. The bend at the upper end of each tibia was at the lower level of the tubercle, and presented an appearance not unlike dislocation of the knee. The rest of the bone in each limb appeared quite normal, with the exception that the lower end, like the other long bones of the limbs, was still a little bulky. The femora were much curved anteriorly, but the shafts of the bones of the upper limbs were quite normal. I therefore decided to perform osteotomy on the tibiæ at the point of curvature, which was done on the right side on July, 1897. The tibia and fibula were carefully and gradually divided—the former from within outwards, the latter from without inwards—with an Adams's saw, and their diaphyses forcibly bent backwards, bringing them into a straight line with their upper epiphyses. The limb was then placed on a double inclined plane, to maintain the bones in their normal relations, and prevent pressure on the tibial vessels. Firm consolidation took place in the flexed position, and in order to allow the new bone filling the gap in the divided diaphyses to become quite solid, the limb was kept in this position for two months. At the end of this time extension of the knee was commenced, and carried out gradually to its fullest extent, with an excellent result, as presented by the condition of the

patient when shown to the Hunterian Society in December, 1897.¹

The skiagraphs of the two limbs afforded an interesting comparison of the tibiæ before and after correction of the deformity by osteotomy. The epiphysal lines of the femora and tibiæ were seen to be unaltered from their normal direction. The bones of the left leg were subsequently divided in a similar manner, with an almost equal result. After the correction of the tibial curves the valgus position of the knees became more noticeable. To remedy this, as well as the anterior curvature of the femora, it is proposed to perform infracondyloid osteotomy of each femur.

UNILATERAL RETINAL CHANGES IN CEREBRAL HÆMORRHAGE, EMBOLISM, AND THROMBOSIS.*

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It is well known that in a large number of cases of cerebral hæmorrhage, ophthalmoscopic examination reveals albuminuric retinitis in each eye. It is also well known that in cases of cerebral embolism associated with ulcerative endocarditis, hæmorrhages and white patches may sometimes be found in each retina on ophthalmoscopic examination. Occasionally embolism of the central artery of the retina, with its characteristic ophthalmoscopic appearances, may be associated with cerebral embolism; but such an association is exceedingly rare. In patients suffering from arterio-sclerosis minute changes may be found in the retinal vessels—general or localised narrowing of the arteries, white lines along the sides of the arteries, localised narrowing of the veins, localised varicose dilatations, etc., and of course these may be present when cerebral hæmorrhage occurs. Other rarer retinal changes have occasionally been found in cerebral hæmorrhage and softening.

But apart from the changes just mentioned, I have observed two others in certain severe cases of cerebral hæmorrhage, embolism, and thrombosis, namely, retinal hæmorrhages or dilatation of the retinal vessels in the eye of the same side as the brain lesion, whilst the opposite retina has not presented either of these changes.

The following are brief abstracts of my notes on the ophthalmoscopic examination in 13 severe cases of cerebral hæmorrhage, embolism, or thrombosis. In 12 of the cases the examination was made shortly before death; in one case death did not occur for some time afterwards. The cases were all in-patients at the Manchester Royal Infirmary, and to the kindness of the medical staff I am indebted for permission to record the observations which I have made on patients under their care.

CASE I.—Right-sided hemiplegia. Necropsy: Cerebral hæmorrhage in basal ganglia of left side. Ophthalmoscopic examination during life revealed three large hæmorrhages close to optic disc on the side of brain lesion (left). See Fig. 1. In the opposite retina no hæmorrhages present.

CASE II.—Right-sided hemiplegia. Necropsy: Cerebral hæmorrhage in the basal ganglia of left side. Ophthalmoscopic examination revealed a large hæmorrhage covering a portion of the optic disc on the side of the brain lesion (left). See Fig. 2. The opposite retina presented no changes.

CASE III.—Left-sided hemiplegia. Necropsy: Cerebral hæmorrhage into right basal ganglia. Ophthalmoscopic examination revealed a large retinal hæmorrhage obscuring a portion of the optic disc on the side of the brain lesion (right). See Fig. 3. The opposite retina presented no hæmorrhages.

CASE IV.—Right-sided hemiplegia. Necropsy: Cerebral hæmorrhage into left basal ganglia. Ophthalmoscopic examination revealed several retinal hæmorrhages in the upper half of the retina on the same side as the brain lesion (left). The opposite retina presented no hæmorrhages.

CASE V.—Left-sided hemiplegia of sudden onset; coma; signs of granular kidney; albuminuric retinitis in both eyes; fatal termination no necropsy.

CASE VI.—Right-sided hemiplegia; fundi normal. Post-mortem examination revealed hæmorrhage into the left basal ganglia.

CASE VII.—Right-sided hemiplegia; no retinal hæmorrhage or other changes. Post-mortem examination revealed hæmorrhage into the left basal ganglia.

CASE VIII.—Right-sided hemiplegia; albuminuric retinitis in each eye. Post-mortem examination revealed cerebral hæmorrhage into the left basal ganglia.

¹ BRITISH MEDICAL JOURNAL, December 25th, 1897, p. 1859.

* Communicated at a meeting of the Manchester Medical Society.

CASE IX.—Right-sided hemiplegia. Necropsy revealed thrombosis of the left middle cerebral artery, the clot extending down into the internal carotid artery for a short distance. Ophthalmoscopic examination during life revealed marked dilatation of the retinal vessels, especially the veins, on the side of the brain lesion (left). The retinal vessels, especially the veins near the optic disc, were also very tortuous. The retinal vessels and fundus of the opposite eye were normal.

CASE X.—Right-sided hemiplegia with aphasia; cardiac valvular disease. Necropsy: Embolism of left middle cerebral artery. Ophthalmoscopic examination during life: Retinal vessels a little dilated and tortuous on the side of the brain lesion (left); the opposite retina normal.

CASE XI.—Right-sided hemiplegia with aphasia; mitral stenosis. No *post-mortem* examination was obtained, but there can be little doubt that the case was one of embolism of left middle cerebral artery. Ophthalmoscopic examination during life: Retinal vessels a little more dilated and tortuous on the side of the lesion (left); retina on the opposite side normal.

CASE XII.—Right-sided hemiplegia; mitral disease. Necropsy: Embolism of the left middle cerebral artery. Ophthalmoscopic examination revealed no changes in either retina.

CASE XIII.—Left-sided hemiplegia; mitral disease. Necropsy: Embolism of the right middle cerebral artery just at its origin. Ophthalmoscopic examination: A large hæmorrhage (see Fig. 4) in the centre of the retina on the side of the brain lesion (right); opposite retina normal.

Fig. 1.—Case of cerebral hæmorrhage. Three large retinal hæmorrhages on the same side as the brain lesion in the other retina no hæmorrhages present.

Fig. 2.—Case of cerebral hæmorrhage. Retinal hæmorrhage on the same side as the brain lesion; in the other retina no hæmorrhages present.

These are the results of the ophthalmoscopic examination in 13 severe cases of cerebral hæmorrhage, embolism, or thrombosis. In 11 of these the diagnosis was verified by *post-mortem* examination, and in the other 2 there can be no doubt that the diagnosis was correct. In 5 of these 13 cases—4 hæmorrhage, 1 embolism—there was a large retinal hæmorrhage on the same side as the brain lesion, whilst the retina of the other eye was practically normal. In 1 of the 13 cases the retinal vessels were markedly dilated and tortuous on the side of the brain lesion—thrombosis of the middle

Fig. 3.—Case of cerebral hæmorrhage. Retinal hæmorrhage on the same side as the brain lesion; in the opposite retina no hæmorrhage present.

Fig. 4.—Case of cerebral embolism. Unilateral retinal hæmorrhage on the same side as the brain lesion.

cerebral extending into the carotid—whilst the other retina was normal. In 2 cases—cerebral embolism—the retinal vessels were a little dilated on the side of the lesion, whilst the other retina was normal. Thus, in 8 out of the 13 cases there were unilateral retinal changes on the same side as the brain lesion, whilst the other retina was not affected by these changes. In tabular form the results may be expressed as follows:

Cases of Brain Lesion.	Large Retinal Hæmorrhage on side of Brain Lesion only.	Dilated Retinal Vessels on side of Lesion only.	No Retinal Hæmorrhages or Dilated Vessels.	Bilateral Albuminuric Retinitis.
Hæmorrhage (8)	4	—	2	2
Embolism (4)	1	2 slight	1	—
Thrombosis—middle cerebral extending into carotid (1)	—	1 marked	—	—

The above are the results obtained by careful ophthalmoscopic examination—direct and indirect methods—in severe cases which terminated *fatally*. Probably these changes will rarely be found in mild cases which do not end *fatally*. Also, they are sometimes present only during the last 24 or 48 hours of life. From these results the following conclusions may be drawn:

1. In cases of hemiplegia from cerebral hæmorrhage which

terminate fatally, large hæmorrhages are not infrequently found in the retina on the same side as the brain lesion, whilst no hæmorrhages are present in the opposite retina.

2. In cerebral embolism the same retinal condition is occasionally met with; also in cerebral embolism occasionally the retinal vessels are slightly dilated on the side of the brain lesion.

3. In thrombosis of the middle cerebral artery, when the thrombus extends down into the internal carotid, the vessels of the retina on the side of the brain lesion may be markedly dilated and tortuous, whilst the retinal vessels of the other eye are normal.

MEMORANDA: MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

ELEPHANTIASIS OF BOTH LOWER LIMBS.

THE accompanying illustration represents the legs of an old lady, aged 87, who has never lived elsewhere than in England. The condition began over seven years ago, and at that time she was so ill that she had to remain in bed for a number of months. She had suffered from ulcers on the right leg for five years previously, but they healed under the influence of rest in bed in spite of her illness. The illness consisted of feverish attacks, with redness, pain, and swelling in the legs. In the patient's own words the skin looked "like pickled cabbage," and, so far as her memory serves, the condition began simultaneously in each limb. It occurred in exacerbations, at first severe and at short intervals; subsequently less severe and less frequently, but in all cases attended by a gradual increase in the size of the limbs.

At the present time the right leg measures in its thickest part $22\frac{1}{2}$ inches, and the left $22\frac{3}{4}$ inches. The skin is of a dusky leaden hue, and is everywhere unbroken. It is covered with thick, sebaceous crusts, and about the toes the

epidermis is hypertrophied into masses of horn. Pitting cannot be produced in the affected part of the legs, although it is easily obtained for a few inches above that level.

The patient has a double cardiac murmur and a considerable degree of chronic bronchitis, but she is able to walk short distances, and is remarkably strong considering her years. The abdominal viscera appear to be normal, and there is no albuminuria, nor is there any history or sign of syphilis. The inguinal glands are slightly enlarged.

Of the various causes of extratropical elephantiasis, erysipelas seems to have been the one obtaining in this case, and the condition may therefore be regarded as analogous to Hutchinson's solid œdema, that is, recurrent erysipelatous lymphangitis.

Elephantiasis is admittedly uncommon in this country, and it appears to be especially rare in both lower limbs. One such case, unaccompanied by an illustration, is reported by Dr. Purdam.¹

Wanstead.

PATRICK F. MACGREGOR, M.D., D.P.H.

THE USE OF PUMICE-STONE SOAP IN THE DISINFECTION OF THE SURFACE OF THE BODY.

THE most effective element in the sterilisation of the hands of the surgeon and of the patient's skin is undoubtedly the preliminary washing and scrubbing with soap and warm water that should invariably be carried out. This mechanical method of disinfection is really more important than the subsequent chemical one by some disinfectant, and as an aid to it I have found the use of pumice-stone soap of the greatest assistance. As is well known, pumice, or pumice stone (for it occurs in two forms) is a light porous material of volcanic origin, and composed chiefly of silica. It varies in colour, being white, black, or grey, but it is so hard that it is used either in its solid form or as powder for polishing glass, bone, ivory, marble, and even metals. By the ancient Greeks it was employed for procuring a fine gloss and smoothness on the human skin, and at the present day it is sold by druggists for removing stains and marks from the hands. It does this so effectually that it occurred to me that in the form of the pumice-stone soap it might be made use of in my surgical work in connection with the disinfection of the human skin. For a considerable time I have so used it, and, I think, with great advantage. Mechanically it helps to remove the dirt and effete epidermal cells from one's hands in a way that no other soap does, and I have consequently come to regard it as a valuable aid to asepsis of the human skin.

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INTESTINAL OBSTRUCTION: EVACUATION OF A GALL STONE: RECOVERY.

M. P., aged 71, on April 1st, 1898, after her dinner, was suddenly seized with vomiting and acute pain in the abdomen. The bowels had been freely open on the previous day. About a year previously she had had an attack of acute abdominal pain, without vomiting, but with complete obstruction, resisting all aperients, and lasting four days. The bowels then acted, and all pain speedily disappeared; the motions were then not examined.

On the present occasion the vomiting was almost continuous. There was great abdominal tenderness, especially to the left of the umbilicus, slightly coated tongue, and normal temperature. The rectum on digital examination was empty. No sign of any external hernia. Calomel gr. v given and retained for an hour; vomiting then again started, and continued until April 4th. In the meantime various purgatives were tried, and several very copious enemata given, two of which contained castor oil, and were retained for at least an hour. There was still no action of the bowels. Operative interference was urged, but absolutely refused. On April 4th vomiting ceased, and small quantities of fluid nourishment retained. In the evening two calomel and colocynth pills were given, with the result of starting the vomiting again in four hours. After six hours vomiting again ceased. Her general condition kept good, and at midday of April 10th she was ordered half-drachm doses of magnesium sulphate every two hours until 3ss had been taken.

Early on April 11th she passed three large motions, and in

¹ BRITISH MEDICAL JOURNAL, 1887, vol. ii, p. 1287.