A CASE OF COMPOUND FRACTURE OF THE LEG, TREATED ON A NEW SPLINT.

By F. T. PAUL, F.R.C.S.,

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THE following case is reported in illustration of the use of a splint which I am now recommending for the treatment of compound fractures of the leg, and disease of the ankle-joint.

Hugh R., aged 15, a rivetter, was struck by a large iron plate on the outer side of his leg. When seen, the sharp end of the upper fragment of the tibia was protruding two inches out of a wound at the inner side of the leg, in the lower third. Ether was administered, and the wound enlarged, and thoroughly carbolicised. The bones were accurately fitted together, and a stout wire passed round them, and tightly twisted. Then, the patient being still under the anæsthetic, the splint was applied in the following manner.

With a strip of lead the contour of the front and back of the sound limb is taken from a few inches above the knee, down the tibia, over the toes, heel, calf, and back to the thigh. A strip of stout hoop-iron ($\frac{3}{8}$ inch $\times$ $\frac{1}{4}$ inch) covered with rubber tubing is then bent to lie easily over the outside of the lead pattern, following all its deviations accurately, so that it may fit without pressing unduly on any part (Fig. 2).

FIG. 1.—From a Photograph on the 5th day. (a) The splint. (b) The paraffin bandage. (c) The wax and carbolic oil finish. (d) The antiseptic gauze showing from under the stiff bandage. (e) The fractured limb.

FIG. 2.—The splint of hoop-iron covered with rubber tubing.

When the splint is ready (it is of course prepared before the anæsthetic is given) and the bones have been wired, the whole limb is thoroughly carbolicised, and the foot and leg well bandaged with antiseptic gauze, leaving a wide interruption at the site of the fracture. Over the gauze a layer of domette bandage, saturated with hot paraffin-wax, is placed, or a plaster-of-Paris bandage. As soon as the stiff bandage has set, the splint is put on, and more wax or plaster bandages are applied to retain it firmly in position. Lastly, cotton-wool is packed under the edges of the bandage at the interruption, and brushed over till saturated with Howse's mixture of bees' wax and carbolic oil, and the antiseptic dressing is completed (Fig. 1). A very little subsequent care in the dressings will prevent any discharge from getting between the leg and the splint.

The advantages of this mode of treatment are, that no deformity of the limb can possibly take place, as the bones are wired and permanently fixed under an anæsthetic; and that the repair is rapid, owing to the absence of movement necessary in the ordinary method of dressing compound fractures. The choice between paraffin and plaster-of-Paris bandages must depend upon the weight of the limb, and the fixation of the fragment. When the limb is small and the fragments are well fixed, paraffin is quite sufficiently rigid; but under the reverse conditions plaster-of-Paris should be used, at any rate for some part of the bandage. Paraffin is much the better material in every way, except for its want of sufficient rigidity in the warmth of the bed. In this particular case paraffin was used, and answered admirably. There was a good deal of oozing of blood through the night, but not a drop passed inside the splint. The case was dressed once a day for a week, and then every other day for a fortnight under the spray, when it was stopped, as the wound was healing well. On the eighteenth day the wire was untwisted, and the bones were quite firm. Granulations rapidly appeared in the bare bone at the bottom of the wound, and no necrosis occurred. The highest temperature attained was 100°, and that only on one occasion. On the seventh day the patient was dressed and taken to the Medical Institution in a cab, without the least pain

or inconvenience, owing to the perfect support given by the splint; and now, six weeks after a severe compound fracture, he is up on the couch, with the wound almost closed, and the measurements of the leg in every respect normal.

In cases of disease of the ankle-joint with discharging wounds, the splint should be fixed with paraffin, or simply with strapping, leaving all the heel and instep open, and the leg well protected under the splint by a soft or paraffin bandage. If the heel suffer from pressure on the lower bar, the leg and foot should be attached first to the upper bar alone, and then by a bandage round both. The dressings should always be slipped between the heel and the lower bar, or discharge will collect there and decompose.

The splint may be obtained from Messrs. Krohne and Sesemann, in London, and from Mr. Critchley in Liverpool. For hospital use, for compound fracture, it is best ordered in lengths of 5 to 6 feet for adults, to be bent to pattern by the surgeon; but in private practice, and for disease of the ankle, the pattern can be traced on paper from the strip of lead, and the splint ordered about half an inch larger in all dimensions than the limb.

CASE OF SPASM OF THE MUSCLES OF THE FACE AND CATARACT DUE TO DENTAL IRRITATION.¹

By HENRY SEWILL, M.R.C.S., L.D.S.

THE patient was a middle-aged lady, unmarried. She had suffered all her life from bad teeth and neuralgia. During late years the suffering had frequently been acute, and she had had a constant succession of alveolar abscesses, with great swelling of the face, especially on the right side. She had long been under the care of Dr. W. Hoffmeister, of Cowes, who had frequently urged her to have her teeth attended to, but without avail. The patient could not overcome her dread of dental operations. About two years and a half ago, during 1881, her right eye became painful at times, apparently from neuralgia. In January, 1882, contraction of the muscles of that side of the face took place, and had persisted ever since. In July of that year, drooping of the right eyelid came on suddenly, and she then discovered that she had lost the sight of her right eye. Dr. Hoffmeister, believing that her condition was due to the dental disease, and having again in vain urged her to have her teeth examined, sent her to Dr. Ferrier. In July, 1883, she went to Dr. Ferrier. He reported of the case as follows.

She was a very nervous middle-aged spinster, with facial spasm and apparent neuralgia on the right side of the face and head. She said she could not open her right eye; but, on examination, this was found to be not exactly true, as with effort she could do so. The closure of the eye was due to spasm of the orbicularis muscle, and was not ptosis. She would scarcely allow her head or face to be touched; but there was evidently great tenderness in the region of the right upper canine. The neighbouring teeth were much encrusted with tartar, and the gums looked red and swollen. The right lens was almost opaque. Believing that the cause of the neuralgia, the facial spasm, and the cataract was in the dental disease, Dr. Ferrier insisted that she should have the teeth set right or extracted. That the dental irritation was the cause of trophic disorder leading to cataract, Dr. Ferrier considered most probable, looking at all the circumstances of the case, and the fact that the symptoms were entirely unilateral.

The patient was at length induced to have her teeth examined, and came to me. I found, in the upper jaw, the stumps of some molars, and the bicusps, canines, and incisors, except the left central and lateral incisor. In the place of these was a vulcanite frame, with artificial teeth, attached to the neighbours. This had not been removed for years, and, as well as the rest of the teeth, was covered with tartar. The upper teeth were all carious, and had been the centres of long standing inflammation. The right canine was broken down nearly to the gum. Considerable thickening and swelling extended upwards over the root; and pus could be pressed from the gum through small fistulous openings over the roots of all the teeth. The lower teeth, of which about ten remained in front, were hidden beneath an enormous mass of tartar, which extended fully half an inch over the floor of the mouth. The patient's confession that she had endured years of incessant pain and discomfort from her teeth through dread of dental operations, was amply borne out by examination. Nitrous oxide was administered on two occasions, and the upper teeth were extracted. The tartar was gradually removed from the lower teeth, and an upper set of artificial teeth was provided. Within two days of the extraction of the teeth, the facial spasm entirely dis-

¹ Read before the Harveian Society.

appeared. The patient's health rapidly improved, but no change took place in the damaged lens.

This is the first case of disease of the eyeball due to dental irritation with which I have met. I see cases of neuralgia in the neighbourhood of the eye very commonly, and cases of neuralgia of the eyeball less frequently, in which the cause is easily traceable to the teeth, the eye being perfectly healthy. The pain in some cases is attended with lachrymation; in a few with muscular twitchings of the face. The most frequent condition of the teeth giving rise to the neuralgia and other symptoms is caries, with exposure and chronic inflammation of the nerve. Patients are often unconscious of the condition of the teeth, the pain being distant and the teeth not aching. Touching the exposed nerve, or directing a stream of cold water on to the tooth, or into the cavity, will usually bring on a paroxysm of the distant pain and establish a diagnosis where doubt exists. Dental periostitis, exostosis, and necrosis, and also impacted lower wisdom-teeth, are less common causes of neuralgic pain.

From a paper lately read at the Odontological Society by Mr. Henry Power,² I learnt, with some surprise it must be confessed, that Mr. Power and numerous first-rate ophthalmic authorities, British and foreign, hold the opinion that dental lesions are very frequently the cause of serious diseases of the eye. Mr. Power lays it down as a maxim to be generally observed, that in all cases of threatening glaucoma, especially when this is associated with ciliary neurosis and obscure pains in the temples and maxillary orbital regions; in all cases of mydriasis, and probably of myosis, originating without apparent causes; in all cases of sudden paralysis of either of the orbital muscles, or of loss of sensation in the absence of cerebral symptoms; in all cases of phlyctenular disease of the conjunctiva; in all cases of ulcers of the cornea resisting ordinary treatment; in all cases of sudden failure of accommodation, especially in young children; and, finally, in cases of exophthalmia, the condition of the teeth should at least be examined, and, if faulty conditions present themselves, these should be at once rectified, and then one at least of the possible causes of each of these diseases will be removed. To this list must now be added cataract; for, although Mr. Power tells me he has not himself seen such an one, he accepts the case I have narrated as probably due to dental irritation.

Mr. Power gives many cases of his own and of other well known observers—Hermann Schmidt, Galezowski, and von Gräfe—in support of his opinions; and these opinions were corroborated by other ophthalmic surgeons in the discussion at the Odontological Society. Mr. Power points out the various ways in which diseased action about the teeth may reach the eye. These are (1) by inhibition; (2) by trophic or vaso-motor influence (under this heading Mr. Power would place my case); (3) by extension of neuritis; (4) by reflex irritation, or sympathy.

I must express no opinion upon these views; but I may repeat I have never, with the one exception, met with a case of eye-disease in which there seemed reason to suspect diseased teeth as a cause; that is, I have never had such a case referred to me as dental surgeon in hospital or in private practice.

I trust my case may be considered worthy of record and of discussion; and, in order to stimulate discussion, I have ventured to cite the recent *apropos* utterances of Mr. Henry Power.

TWO CASES OF EXCISION OF THE RECTUM.

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IN the BRITISH MEDICAL JOURNAL for April 28th, 1883, I published a case of successful removal of the rectum from carcinoma. Since then I have had two other cases under my care. In one, the growth was entirely removed, but the patient died on the fourth day after the operation. In the other, although I only partially succeeded in getting away the disease, the patient made an excellent recovery, and the distressing symptoms from which he had previously suffered were for the time completely relieved. As excision of the rectum is comparatively speaking a new operation, it would appear desirable that at present all cases, whether successful or unsuccessful, should be recorded. I, therefore, bring these under the notice of the profession.

CASE I. T. G., a man 54 years old, but looking older, came under my care at St. Bartholomew's Hospital, in the absence of Mr. Willett during the autumn vacation, suffering from malignant disease of the rectum. About eight months ago, he noticed an aching pain in the

sacrum, chiefly while passing a motion. Seven weeks, and again a fortnight ago, he passed blood *per anum*, and consulted Mr. McDonald, who, discovering the nature of disease, sent him to Mr. Willett as a favourable case for operation. The patient, although he said he had always enjoyed good health, looked weak and feeble. The anus was patulous, but there was no other external sign of disease. On passing the finger, a growth was discovered about two inches from the anus situated posteriorly and to the right, having a strip of healthy mucous membrane in front and to the left side. The growth was circular in shape, with a depressed centre, raised and indurated edges, and ulcerated surface. It appeared freely movable, but the finger could not be passed beyond it. The urine was neutral in reaction, its specific gravity was 1015, and it contained neither sugar, albumen, nor blood. As the upper boundaries of the growth could not be well defined, it was determined to examine under an anæsthetic, and to act accordingly.

On September 15th, the patient having been etherised and placed in the lithotomy-position, it was found that the growth could be drawn down, and healthy bowel reached beyond it. A full sized catheter was passed into the bladder, and Denonvillier's posterior incision made from the anus to the tip of the coccyx, and another carried along the junction of the skin and mucous membrane round the right margin of the anus to a point a little beyond the middle line in front. The rectum was then rapidly freed by the finger, and a few touches of the knife from the surrounding structures posteriorly and laterally, and more carefully anteriorly from the urethra and prostate. The disease being confined to the right side and posterior part of the bowel, the usual incision round the left margin of the anus was not made, but a strip of mucous membrane on the left side was left by severing the bowel longitudinally on either side of the disease with scissors, cutting carefully, and tying any bleeding points as they appeared. The growth having been thus freed laterally, was dragged down with vulsellum forceps, and separated from the bowel above with scissors. The hæmorrhage was free but excessive, and most of the vessels were secured by ligature; but as one or two could not be tied, the deep part of the wound in which they lay was plugged with lint, and a pair of pressure forceps left on one of them. No dressings were applied. Considerable collapse followed the operation; an ounce of brandy was administered on his return to the ward, and, on recovering from the collapse, twenty minims of tincture of opium.

On the 16th, the patient had passed a fair night, but the opium had to be repeated twice on account of pain in the hypogastric region. The plug of lint and pressure forceps were removed, and the wound, which was very foul, was syringed out with carbolic lotion (1 to 100). There was still some slight pain in the hypogastrium, but the abdomen was not tender, and moved in respiration. Fifteen minims of tincture of opium were ordered to be given every three hours whilst the patient was awake, and the wound to be irrigated every two hours with Condy's lotion. Pulse in the morning, 84; in the evening, 100. Temperature 9 A.M., 100°; 3 P.M., 101.8°; 8 P.M., 100.2°.

September 17th. He passed a restless night. There was still tenderness over the hypogastrium, and the abdomen was very tense. Breathing was purely thoracic; temperature, 9 A.M., 99°; 6 P.M., 97.2°; 9 P.M., 99.6°; pulse, 96, weak.

September 18th. The wound was very foul and discoloured, although it was washed out every two hours. The abdomen was still tender and tense, and the breathing thoracic. The temperature rose during the day to 101.4°, and the pulse from 108 to 130. He became gradually weaker, and died on the morning of the 19th.

At the *post mortem* examination, contrary to what was expected, there was no peritonitis. The peritoneum had not been injured, the wound being fully half an inch from the apex of the recto-vesical pouch. This pouch, however, contained several ounces of blood-stained fluid, and there was some discoloration and injection of the vessels in the neighbourhood of the wound. The wound itself was sloughy and foul. The disease had been completely removed by the operation. Several of the viscera were in a state of fatty degeneration.

CASE II.—A. B., a gentleman, aged 47, consulted me on October 29th, 1883. He said that, with the exception of an attack of piles, he had always enjoyed good health until six months ago, when he first began to suffer from pain during defæcation. He had never passed blood, but had noticed that his motions were small. He had lost latterly more than a stone in weight, but was still a stout muscular man. On examination, a firm, smooth, somewhat oval-shaped lump was found projecting into the rectum on its posterior and left lateral aspect, and about one inch and a half from the anus. It felt fairly circumscribed, but somewhat adherent to the parts beneath; the mucous membrane covering it was not ulcerated. The patient, with the exception of his rectal disease, was reported to be sound. I advised excision of the rectum. On November 20th I again saw him,

² "On the Relations between Dental Lesions and Diseases of the Eye," by Henry Power (*Trans. Odont. Soc.*, November, 1883).