ON THE MODERN TREATMENT OF FRACTURES OF THE LOWER JAW.*

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LONSDALE'S apparatus is also devised to bring down the uneven line of the teeth. This apparatus is only suited to those cases of fracture between the incisors, as its ivory cap is too short to reach far along the arch of the teeth. It also is very cumbersome; and causes great pain by the pressure

Fig. 1.—Lonsdale's apparatus for fracture of the lower jaw. A. Ivory cap for incisors; B. Horse-shoe chin-piece; C. Bar carrying ivory cap, which is drawn down by turning the screw-nut, E; D. Lateral moveable cheek-pads for lateral support.

under the chin necessary to keep the fragment in place, and by the jogging of the vertical part against the sternum.

Fig. 1 shows this apparatus somewhat modified by myself. In the ordinary Lonsdale's apparatus, the rod carrying the ivory cap (A) for the incisors slides freely up and down a bar, projecting downwards from the chin-piece (B), and, when in the required position, is fixed by a pin. I have had a screw-thread cut on the bar, on which a nut (E) travels so as to force down the rod carrying the cap (A), and thereby approximate the cap on the incisors and the chin-piece.

When this apparatus is to be applied, the fragments are placed in position by the hands, the ivory cap set on the incisors, and the chin-piece, which should be well padded with lint or wool stitched in wash-leather, brought up into place under the jaw and the two made fast. The two cheek-pieces are then adjusted so as to press lightly on the jaw at each side, to prevent the apparatus from swaying aside out of place; and a tape is fastened to a hole at each end of the horseshoe, and carried behind the neck, to keep the instrument from slipping forwards. So applied, Lonsdale's apparatus permits opening of the mouth for eating and speaking; and, if the fracture be single and between the incisors, it keeps the fragments in position very fairly.

It must be worn six or seven weeks, and then may be discarded; and, if the jaw be firmly set, nothing more is necessary than to caution the patient against biting hard food, crust, etc., for some time longer. If not quite firm, the jaw should be supported by a

four-tailed bandage, and kept shut a couple of weeks more. Should the jaw shut so closely as to prevent the passage of food, two thin gutta-percha wedges should be placed along the molars to prop the jaws a little open, as is directed in applying the external splint.

A case of fracture of the jaw was admitted under my care into University College Hospital, on Sept. 12th, 1866, where the jaw was broken on the left side between the second and third molars, and again on the right side between the canine and incisor teeth, with comminution of the alveolus, and a lacerated wound of the soft parts underneath the chin, the injury having been caused by a kick.

The displacement in this case was very great. The right fragment moved freely both inwards or outwards; the middle fragment was drawn down very much below the rest, its hinder end being locked beneath the posterior piece, while, on the contrary, this posterior fragment was lifted as much too high by the muscles attached to it.

As the ordinary external splint completely failed to keep the parts in position, any contraction of the muscles attached to the various fragments dragging them out of position when placed there, I tried Lonsdale's apparatus modified to suit this case as seen in Fig. 2. I replaced the ivory cap of the incisors by an iron plate carried along the whole dental arch in order to bear on each fragment successively, trusting thus to overcome the displacement. I padded the plate with India-rubber, in the expectation that the cusps of the teeth would bed themselves in this soft material; but, on applying it, I found that the plate had no hold of the teeth; they slipped first to one side and then to the other. It became evident that a cap fitted to all the teeth of the lower jaw would alone obtain sufficient bearing to retain the fragments in their true position. I then requested Mr. Ibbetson, the dental surgeon to the hospital, to see the patient with me, and to his skill and experience the success of our treatment is mainly due. After considerable difficulty in overcoming the displacement, Mr. Ibbetson obtained, under chloroform, a mould of the lower jaw, including the last molar of the left side, the only tooth behind the fracture near the ramus. From this mould in gutta-percha, a cast in plaster was taken, and on this Mr. Coxeter made a metallic cap (A) to fit the lower jaw. (See Fig. 2.) This cap was then riveted on to the

Fig. 2.—Lonsdale's apparatus, with a metal model of the arch of the teeth replacing the ivory cap. The long rod underneath, seen in Fig. 1, was also got rid of by strengthening the bar, C, and putting the screw-nut on it.

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iron plate that I had previously applied to Lonsdale's apparatus, and the whole adjusted to the jaw under chloroform, when it was found that the reduction of the displacement was effectual, and the fragments were steadily retained in place. But, meanwhile, owing to the severe laceration and bruising of the soft parts and the comminution of the bone itself, suppuration had set up about the jaw; matter collected under the jaw, on each side of the chin-piece, escaping from time to time at the wounds in that situation. This soon loosened the bearings of the splint under the jaw, and a certain amount of mobility between the middle and posterior fragment returned; displacement in front was, notwithstanding, still completely prevented. The patient, after wearing this apparatus seven weeks, had firm osseous union of the anterior fracture; the posterior fracture was still moveable, and matter discharged from its site, where a piece of necrosed bone lay. The arch of the jaw was quite even, and he could eat well without pain. The man is now in full work as a brick-maker, and unwilling to relinquish that, while trade is brisk, to have the piece of dead bone removed. Until this is done, there is little chance that the bone will unite. It is almost to be wished his present condition caused him more discomfort. Where the muscular resistance is less than in the instance just recited, the powerful external apparatus may be substituted by a lighter one, to the great comfort of the patient, as in the following methods.

In 1858, Mr. Howard Hayward, surgeon-dentist, contrived, at the request of Mr. James Lane, an interdental splint for a patient of St. Mary's Hospital, in whom the ordinary external and Lonsdale's splints were ineffectual to prevent displacement. In this case, the left fragment was carried downwards three-quarters of an inch, and behind the other fragment. To remedy this, Mr. Hayward constructed a silver cap to fit the teeth—the first occasion, so far as I know, in which a metallic plate was fitted to a cast of the teeth for this purpose. While the fragments were held in position by assistants, he took a wax model of the ten anterior teeth. On a metal block made from this model, Mr. Hayward fitted a silver cap (P P, in Fig. 3), which extended over the

ten anterior teeth. He then soldered two doubly curved wings of silver (π π), which passed out of the mouth, and turned back over the cheek. These were firmly tied to holes drilled on a level with the mouth, in a well-padded gutta-percha chin-splint, and the whole supported by a four-tail bandage. As the teeth were held securely immovable between the silver splint thus fashioned for them and the outside chin-splint, the patient could at once speak and swallow without pain. In three weeks, the bandage and outside splint were laid aside; but the silver plate was worn sometime longer, though the fracture was set, and the bite perfectly accurate. This condition was found to be the same twelve months afterwards.

In 1861, Mr. Hayward treated another case of triple fracture between the right canine and lateral incisor, between the left first and second molars, and through the ramus near the coronoid process, where

the displacement was also considerable. The left horizontal piece was drawn backwards and downwards. The same plan was pursued here, with similar success. As, however, the fracture could not readily be reduced for the purpose of making a wax model of the teeth in the lower jaw, one was taken with the parts in their displaced position; and the defective cast obtained from this model remedied by sawing it through at the lines of fracture, bringing the pieces up to a level, and casting again; correspondence with the upper jaw being secured by fitting the fragments to a cast of the upper jaw, taken separately. The result was good in this instance also.

I am much indebted to Mr. Hayward for the notes of these cases, which are, I believe, the earliest instances of the employment of fitted interdental splints in treating these fractures. A brief record of one of these cases was published by Mr. Lane in the *BRITISH MEDICAL JOURNAL* for October 1858.

In the *Lancet* for June 16th, 1860, Mr. Salter, surgeon-dentist of Guy's Hospital, described a case of a fracture of the upper jaw-bone, treated by a gold plate with success.

Mr. Hayward prefers metal to vulcanite as the material for splints, because it (especially when of gold) is more easily kept clean; and metal splints can be made much thinner, and consequently occupy very much less space in the mouth, and therefore provoke the flow of saliva less, than the more bulky vulcanite, which is, again, brittle, and likely to break if let fall, or break away from the wings carried outside.

[To be continued.]

UNREASONABLE DOCTORS. What excessively unreasonable people these London doctors are! What is to be said about a gentleman like the medical officer at Newington workhouse, who grumbles because he has every day to see about 200 patients in summer, and about 250 in winter, to prescribe medicine for about 25 or 30 daily, and to attend every summons from the workhouse officials either personally or by his assistant? And yet he receives actually 100 guineas a year for doing this, with an additional £8 or £10 "for going before the magistrate and swearing about the paupers." It is true that out of this £113 or £115 he has to pay his assistant's salary, say £70 or £80; but what of that? Is not the privilege of attending and physicking the Newington paupers quite enough in itself, to say nothing of the £40 or £50 which the doctor nets by the transaction? Then there is a cantankerous person at Bermondsey who thinks himself hardly used because he only gets £110 a year for doctoring all the paupers at his own expense, which costs him £25 a year in drugs, besides the salary he is obliged to pay his assistant. The Clerkenwell doctor is every whit as unreasonable. After finding the drugs necessary for the paupers, and giving his assistant £80 a year, he positively pockets a balance of £40 annually. With such prizes in the medical profession, the only wonder is that there is not such a rush of candidates for admission as to thin the ranks of other professions to an alarming degree. It is worth noting, too, that the emoluments and pleasures attached to workhouse management evidently vary inversely according to their importance and dignity. Thus the responsible medical officer gets about £40 a year, while his subordinate gets £80; and the great Bumble himself dines out at the parish expense, and charges the ratepayers only about £2 for the dinner he has consumed and the wine he has absorbed. And this is what we call local self-government.—*Pall Mall Gazette*.