

been properly cared for. Careful and properly repeated syringings with water medicated with iodine or capsicum will protect it. This experience does not, however, include the isolated osteophytes; these do without doubt incline to degeneration and decomposition, but by care the many may be stimulated to a self-supporting combination to which the periosteum becomes what it was to the bone exfoliated.

It is certainly most unfortunate that in the case of the upper jaw no osseous repair seems attempted, but it is not the experience of the author that the horrible deformities mentioned by various writers are at all common. Local and systemic stimulation combined with a tonic treatment insures more or less attempt at supporting the surrounding parts by an exudate which assumes a fibro-cartilaginous aspect, and which takes on itself the duties of the structure lost, to very good purpose.

In loss of structure in the lower jaw the most vigorous efforts are seen to exist on the part of the periosteum almost from the beginning to reproduce the impressed part, disproving to such extent, as it would seem, the deduction of Dr. Geist, that the phosphorostitis is secondary to periostitis, for assuredly is it the case that under no circumstances of excitation does that tissue exhibit higher vitality. That this secondary deposit differs from the original bone, in possessing an excess of organic structure, implies perhaps only that the deficiency in inorganic substance has its explanation in the presence of the corroding acid of the disease. That the capsule of new bone is so frequently found to atrophy may have similar explanation with the primary osteophytic degenerations, requiring, if not a local, yet a constitutional care. A suggestion made by Mr. Salter that the new bone be supplied with function by using it as soon as possible as a base for artificial teeth may be found to have in it much practical import.

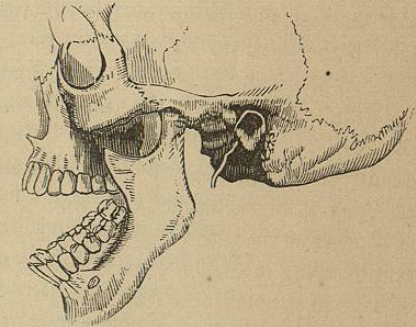
CHAPTER LIII.

DISLOCATION OF THE INFERIOR MAXILLA.

THE frequency of this accident, the terror it excites, and the harm resulting when it is not properly cared for, give an importance that renders appreciation of the subject a matter of necessity.

There are four forms of submaxillary displacement: complete dislocation, incomplete, bilateral, and unilateral. In the first of these, one or both condyloid processes have slipped fully out of the glenoid fossæ and rest entirely in front of the articulating eminence, as exhibited in the view.

FIG. 508.—COMPLETE DISLOCATION OF JAW.



In the second, the condyles rest upon their interarticular fibro-cartilages, directly over the articulating eminence, and will remain fixed, or may fall backward or forward as directed by accident, not being retained in their position, as is frequently thought, by the coronoid processes being hooked under the malar bones, but resting, as it were, upon points with complete balance in the muscular structures. The forms described are bilateral, the articulations of both sides being involved.

A unilateral dislocation relates to one side.

The diagnosis of a luxation is an exceedingly simple matter. An open mouth, with inability to close it, the lower jaw thrust forward in a straight line, or otherwise turned to the right or the left, according to the accident, indicates a luxation of bilateral or unilateral character.

The exciting causes of dislocation are various: laughing, yawning, vomiting, putting large bodies into the mouth, blows received upon the chin from above downward, or in front, while the mouth is open; the extracting of teeth, or extending the jaws widely for the convenient filling of them, etc. The first case ever met with by the author occurred with a middle-aged man while he was laughing immoderately.

A predisposing cause of the accident resides in a general or a special laxity

of the articular connections: thus, all are acquainted with persons who without effort will dislocate a finger or a toe. Rare instances exist where the operation of removing teeth is almost certain to be attended with unilateral luxation unless a mento-occipital sling be used.

What is the condition of parts in this luxation? By placing the finger immediately in front of the tragus of the ear when the mouth is closed, and carrying it forward along the zygoma, the surface is felt to be a plane. If the finger be kept on the surface, and the mouth opened, it drops into a fossa. This is the glenoid fossa; the concave rim above is the border of the cavity; the rounded prominence below is the condyle of the lower jaw. Placing the maxilla of the cadaver in this position, and dissecting down to the articulation, the condyle is seen slipped forward, resting upon the interarticular fibro-cartilage; the fossa has been partially vacated, and the bone lies against the articulating eminence. If now the condyle be dragged downward and forward over the eminence, the glenoid cavity will be found completely vacated, and, unless by manipulation, the condyle cannot be restored. Laying back now the soft parts, the cavity in front of the tragus is remarked greatly increased, the finger falling into the unoccupied fossa. (An added diagnostic sign is found in increased depth and size of the fossa in front of the ear: this it is desirable to remember, as a fracture of the neck might simulate a luxation.) Returning to the examination, we see that to reduce the luxation it is necessary to depress the head of the bone below the level of the articulating eminence, which, being back of the condyle, serves to fix it in its abnormal position, as originally it was the means of its retention in place. The capsular ligament is not usually found torn in a jaw dislocation, but stretched and elongated. The lateral ligaments do not seem particularly interfered with, and impress an observer as having little influence in the matter one way or another. The temporal muscle shows itself stretched and dragged forward, but is seldom lacerated. The pterygoid and masseter muscles are relaxed.

Dislocation is of more frequent occurrence in women than in men, is uncommon in children, and is rare in the robust. When a dislocation has existed for a long time, there seems a tendency on the part of nature to make compromise with the condition; the jaw will gradually recover considerable of the lost motion. Cases are met with where patients seem able to masticate without the least trouble. The original contour of the face is never, however, entirely restored.

A luxation of the lower jaw, like that of any other bone, if left unreduced, even for a very few days, is found difficult to correct; the muscles contract, the condyle settles itself in its new position, lymph is effused and coagulates, the general aspect and relations of the joint are changed. A patient so situated, is not, however, to be left unassisted, or to the relief afforded by nature. A satisfactory practice in cases of this kind, where a luxation may not be immediately reduced, is found in wedging corks between the teeth, forcing the back part of the jaws as far asunder as possible, and then with a properly

directed compress and bandage approximating the anterior teeth, and at the same time forcing the lower jaw backward. This manipulation, assisted by the employment of sorbefacients, not infrequently results in a removal of the semi-organized lymph and a consequent ability on the part of the bone to reoccupy its original cavity.

Reduction of a luxated jaw has been accomplished as long as ninety-eight days after occurrence of the accident.

Subluxations are of common occurrence, particularly among weak women of easy and luxurious lives. In England attention was first directed to the condition by Sir Astley Cooper; in this country it certainly has needed no particular one to discover it,—a proof, perhaps, of the physical superiority of English over American ladies. This condition depends, evidently enough, on laxity of the ligaments, and on the weakness of the muscles of the part. In yawning, or not infrequently in ordinary mastication, the condyle will slip forward on the articulating eminence, and, for a moment, the mouth cannot be closed, requiring, in many cases, the assistance of the hand to shut it. Depending on weakness, a permanent cure is only to be looked for as a higher and stancher vitality is secured. Thus, such tendency and condition are to be treated by cold bathing, tonic medicaments, exercise, etc. In the case of a lady liable to the luxation, and who was made very nervous by its occurrence, the accident was entirely guarded against by wearing the occipito-mental caps and bands. The writer was once consulted by a person who was awakened almost every night by the peculiar and unbearable pain attendant on such slipping of the condyle during the relaxation of sleep.

Dislocations associated with fracture are, happily, of rare occurrence. Delamotte records a case where, in the person of a girl, double luxation existed with fracture of the body of the bone. Another is mentioned by Roberts, where the body was broken in front of the right ramus, and the condyle dislocated outward. A third case (Heath) is reported in the *Dublin Medical Gazette*, and "occurred in a boy of eight, who suffered a fracture at the symphysis, with dislocation of the left condyle upward and backward. There was bleeding from the ear, and the chin was much retracted and turned to the left; the mouth was open, but could be closed, and it was then observed that the lower molars overlapped the upper, but that the lower incisors were at least one inch behind the upper. Reduction was easily effected, and the case did well."

Luxations are sometimes congenital. The first case of this kind was noticed by Mr. Robert Smith, of Dublin, who gives with minuteness the results of his dissection. The patient, an idiot from infancy, died at the age of thirty-eight. The displacement existed on the right side, which was remarkably deformed, having a singularly hollow appearance, which strikingly contrasted with that of the sound one, which was unusually full and plump. The extremity of the finger could be readily pressed between the posterior margin of the jaw and the auditory canal, owing, as was found on examination, to the

absence of the condyle of the bone, which was, in fact, greatly atrophied nearly as far forward as the ramus proper. There was no interarticular cartilage nor distinct capsular ligament, and the masseter, pterygoid, and temporal muscles were much wasted. The temporal, malar, superior maxillary, and sphenoid bones were imperfectly developed, and the glenoid cavity existed merely in a rudimentary state.

Treatment of Luxation.—By referring to Fig. 508, it will be plainly evident that the reduction of a disarticulated condyle consists in getting it back of the eminentia articularis. How best to do this is the question.

1st. Wrap the thumb in delicate napkins, seat the patient on a strong chair, and, standing behind him, rest his head against your person; place now the protected thumbs upon his inferior molar teeth, and with main strength force the jaw directly downward and a little backward: the moment you have depressed the articulating face of the condyle, it will be felt to be dragged into place. The amount of force required to do this depends on the muscular tone of the individual. In some cases the reduction is effected almost before you are aware of having exerted any pressure; in others it cannot be secured without the assistance of mechanical appliances.

FIG. 509.

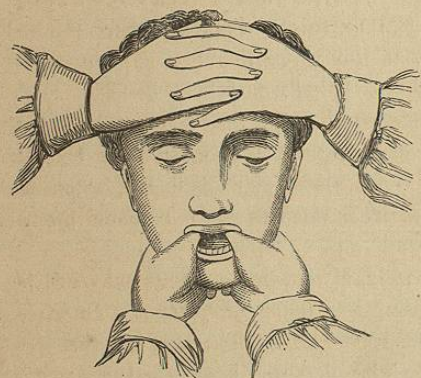


FIG. 510.



Vertico-mental sling or cap.

2d. Failing to reduce a luxation standing behind a patient, reverse the position, resting the head against an assistant.

3d. Take corks, one or two, according as the luxation is single or double, force them between the wisdom-teeth of the upper and the lower jaw as firmly and fixedly as possible; now gradually push the chin forward and upward, using either the hands or a tourniquet applied around the head.

4th. Take a piece of wood about a foot in length, place one end upon the molar teeth of the luxated side, make a fulcrum of the molar teeth of the upper jaw of the opposite side, and elevate the end held in the hand. If the luxation be double, reduce one side at a time. In the use of this lever, the results are most easily secured by resting the centre of the piece of wood upon the teeth of the side to be reduced, carrying the end downward.

The forceps invented by Stromeier yields a powerful leverage. This consists of two blades so expanded at the extremities as to fit, as well as may be, the dental arches, these blades being covered with leather; a spring between the handles throws them apart, thus closing the blades. Reduction is attempted in two ways. So introducing the padded blades that each shall rest upon its proper tooth or teeth,—the third and second molars,—the handles are grasped in the hands of the operator and gradually brought together; when the blades have thus been so far separated as to lead to the inference that the face of the condyle is below the level of the obstructing eminence, the jaw is to be pushed forcibly backward into its place by an assistant.

Another method of using this instrument is the employment of a screw and nut which passes between the blades: a delicate wrench fits the nut, and through its instrumentality the handles are gradually screwed together, separating of course the blades. The manipulation of pushing back the jaw, Stromeier suggests, should be effected at the same moment with the sudden closing of the blades. Even better, however, than the Stromeier forceps is the instrument shown in Fig. 415. With this it is easy to secure the required depression, when the condyle, not unlikely, is found to slip into place of its own accord.

5th. Still another manner is that known as Nélaton's. To practise this, the patient is seated upon a common chair, and the surgeon, standing behind, fixes his thumbs upon the nape of the neck, while with his fingers he pushes the jaw forward and downward by pressure exerted upon the coronoid prominences.

6th. ANÆSTHESIA.—In recent cases the anæsthetic agents may not be required, although there is seldom objection to their employment. In cases, however, of any standing, or in muscular persons, it often happens that it is impossible to succeed in the reduction without the aid of relaxing agents; while, again, the formation of adhesions will be found to make attempts at reduction both painful and formidable.

A luxation having been reduced, it becomes necessary to give support to the parts, and insure for a time against the possibility of the mouth being too widely opened. This is most conveniently insured through the use of a vertico-mental sling made with elastic straps.