

ON
DISPLACEMENT OF THE INTER-ARTICULAR
CARTILAGE OF THE LOWER JAW, AND
ITS TREATMENT BY OPERATION.

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THAT the proper movements of the temporo-maxillary joint may be interfered with by conditions inside the articulation is a fact recognised by all surgical authorities. That a displacement of the inter-articular cartilage—the “subluxation” of Sir Astley Cooper—may be one of these conditions is also recognised. But most modern works on surgery describe this affection as being generally due either to relaxation of the ligaments of the joint allowing a too free movement, or to inflammatory changes of a simple, gouty, or rheumatic nature. Heath¹ writes upon the subject thus: “It is an affection occurring principally in delicate women, and has been thought to depend upon relaxation of the ligaments of the joint permitting a too free movement of the bone, and possibly (though this is conjecture) a slipping of the inter-articular cartilage.” Believing with Mr. Heath and other authors that inflammatory results may cause interference with the movements of this joint, I feel further convinced that, as in the case of the semilunar cartilages of the knee, the inter-articular cartilages of the temporo-maxillary joint may become displaced either from a sudden tearing of their connexions or from a gradual stretching of them.

But the chief object of this short paper is to advocate a new method of treating by operation cases of this condition which resist counter-irritation and the other means usually advised, and in which there are symptoms of a too free movement of one or both of these cartilages. The operation is upon the same principle as that which I have described and successfully carried out in connexion with the displacement of the semilunar cartilages of the knee-joint. The method is as follows:—An incision slightly curved, about three-quarters of an inch in length, is made over the posterior margin of the external lateral ligament of this joint, and is carried down to its capsule. Any small bleeding vessels having been secured, the capsule is divided, and the inter-articular cartilage is seized, drawn into position, and secured to the periosteum and other tissues at the outer margin of the articulation by a catgut suture. The following two cases illustrate the condition, and also the good result obtained by the operation suggested.

CASE 1.—Mary M'C—, aged thirty-eight, was admitted into my wards on March 2nd, 1886. Nine years before her admission she injured her temporo-maxillary joints during an attack of vomiting. The joints remained “locked” for a few minutes, but after a little manipulation she herself put the condition right. Ever since this time she has suffered great discomfort in the joint upon the left side, for whenever any extra movement of the jaws was made this joint became fixed, and remained so until she had practised some manipulations, when movement returned. Frequently also, when she tried to open her mouth, she found that she could only do so to a limited extent, but by using the manipulations the proper separation of the jaws was completed. On March 12th an incision was made over the left temporo-maxillary joint, and, its capsule having been divided, the inter-articular cartilage was found to be loosened from its attachments, and much more movable than usual. The cartilage, having been seized with artery forceps, was drawn into position, and a catgut suture passed through it and the periosteum and other tissues at the outer margin of the joint. The wound healed rapidly, and she left the infirmary on March 25th. At this time the movements of the joint were natural, and she could close and separate the jaws perfectly, without any locking or catch.

CASE 2.—Ann M—, aged eighteen, admitted on Jan. 20th, 1885. Two years before admission, the patient when yawning found her jaws fixed. After a little manipulation she was able to close the jaws, but with a “click” on the right side. Since then she has suffered from pain and stiffness upon the left side, and the movements of the joint were constantly interfered with by something “slipping”

in it. She had been treated by blistering and other remedies without obtaining any relief. On July 23rd the usual operation was performed, and the left inter-articular cartilage, being found loosened, was stitched in position with a catgut suture, as in the former case. The wound was healed at the end of a week, and she left the infirmary on July 31st, with perfect and proper movement of the jaws.

PHOSPHATIC DIABETES.¹

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AMONG the numerous investigations that have engaged the attention of physiologists during the last fifteen years, few yield in interest and importance to the study of the part played by the inorganic constituents of the body in histogenesis, and their influence in producing the daily and hourly variations which occur in the chemical composition of the secretions. Although this branch of animal physiology is only partially developed, yet our knowledge in this direction is steadily and constantly advancing, and the advance will be more rapid when it becomes clearly perceived how greatly minute variations of the inorganic constituents conveyed by the blood plasma to the cells influence for good or evil the processes of nutrition going on in the tissues. I can here only glance at some of the more important facts that have been established in this direction, and touch only on those points which are most closely related to the subject matter of the present paper.

Twenty years ago it was stated in most text-books that inorganic substances passed unaltered through the body, and that the same weight of saline constituents was recoverable from the urine and fæces as was introduced during the same period with the food and drink. The first advance on this simple view was made when it was discovered that chloride of sodium was retained in the body, and consequently disappeared from the urine, in certain diseases attended with increased cell-formation; and that even under normal conditions only four-fifths of the common salt ingested left the body as such, the remaining fifth being decomposed and altered in constitution within the system. Further researches led to the important discovery that whilst inorganic salts pass with immense and usually uniform rapidity into the circulation, and thence to the tissues, their discharge is by no means so regular, and they are detained for very unequal periods, which apparently depends on the need of the tissue to which they are supplied. Thus both Hoffmann and Lascar have shown that, however great the tendency of the alkaline bases is to combine with acids and acid salts, these cannot be withdrawn from the alkaline blood, but are powerfully withheld to maintain its alkalinity. And this fact is illustrated by what occurs in scurvy, for, as I pointed out in 1877,² and it has since been corroborated by Zuelzer,³ as soon as the alkaline carbonates cease to be supplied by means of vegetables, the alkaline phosphates begin at once to disappear from the urine, evidently to maintain the alkalescence of the blood diminished by the withdrawal of the alkaline carbonates. In connexion with this it is interesting to notice that Dr. Gee⁴ has likewise called attention to the remarkable fact that in ague, on the days of the paroxysms, the phosphates almost entirely disappear from the urine; and although Dr. Gee has not attempted an explanation of the phenomenon, still it is not unlikely that this is again an instance of a salt being withheld to supply a special requirement, whilst another is being discharged in excess; for it is important to notice in connexion with this withdrawal of phosphoric acid during the ague fit that the chlorides are at that time eliminated in considerable excess. It would be easy to multiply examples, but enough has been said to emphasise the importance of the rôle played by the inorganic substances in the economy.

Of all inorganic constituents phosphorus has always been regarded as holding the prominent position. When first separated from the urine by Brandt (1669) it was at once hailed by the physiologists of the day as the “blood of

¹ Read before the Medical Society of London, Jan. 10th, 1887.

² General Pathology of Scurvy (Lewis, London, 1877).

³ Untersuchungen über die Semilogie des Harns; Berlin, 1884.

⁴ St. Bartholomew's Hospital Reports, vol. viii.