CLINICAL LECTURE

ON

BONE AND JOINT CHANGES IN CONNECTION WITH THORACIC DISEASE.

Delivered at the Hospital for Consumption and Diseases of the Chest, Brompton.

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CARIES OF SPINE AND CHRONIC TUBERCULOUS JOINTS.

BONE and joint troubles in connection with diseases of the chest have of late years attracted considerable attention.

Amongst the "accidents," to use a logical phrase, of phthisis must be included tuberculous joint disease. On this subject it is unnecessary to dwell at great length. At the Brompton Hospital we have frequently to deal with caries of the spine and sacro-iliac joint, and with white swellings of the larger joints. Their pathology is probably not different from that of cases occurring independently of lung trouble; but the symptoms are often less marked, and the course slower than in uncomplicated cases—at all events, this is the opinion I have formed after watching a great number of cases.

In treating them it is impossible to follow the strict rules of surgical practice. If a patient must succumb to the disease of his lungs in six months, it is absurd to curtail his freedom for the short remaining period when he can appreciate locomotion in order to attempt to cure caries of his spine; or to apply an irksome plaster-of-paris apparatus to a shoulder which, though not quite quiescent, gives him very little trouble. So that it is necessary to try to estimate the chance of life before deciding on the degree to which treatment should be regulated by the recognised canons of surgery.

Again, in cases of comparatively mild joint disease associated with early phthisis, the question of conservative surgery *versus* amputation has to be very seriously weighed. I have no doubt that it is often the best policy to remove the cause of offence altogether, not only because this course may lead to a quite unexpected improvement in the lung condition, but also because partial operations, such as excisions and erosions, are very apt to lead to disappointment when there is active tuberculous mischief in the lungs.

I show you here the bones of the knee-joint and those of the elbow-joint of two phthisical patients recently in the hospital. In both cases the joints were excised, but the knee did not unite, and the elbow shows no signs of repair. The patient whose knee was excised died of his lung trouble; in the case of the elbow I was obliged to amputate in the middle of the arm. But, on the other hand, this patient (a man 31 years of age, and apparently in the best of health) has chronic tuberculous disease of his lungs, tuberculous kidney, and tuberculous testicles. He had a white swelling of the knee, and I excised the joint in January, 1895, but the healing process was extremely languid, and after many months, several of which were spent at Bournemouth, as no union had taken place, I urged him strongly to allow me to amputate through the thigh. He, however, hesitated, and the result has been that a year after the operation the wound healed and the bones united, and now he has a good firm limb, and has returned to his occupation, that of a schoolmaster.

RIBS AND RIB CARTILAGES.

Another common complication of phthisis is necrosis or caries of rib or rib cartilage. It gives rise to a slowly developing swelling over one or more ribs if the matter comes to the surface, which has sometimes been mistaken for a tumour. If the matter collect on the deep surface, as it very often does, it may form a collection there of considerable quantity, which may readily be confused with a localised empyema. This is one of the forms of what has been termed *peripleuritis*. The proper treatment for this disease is to remove bodily the part of rib which is affected. Scraping operations are not very satisfactory, and I have seen such a procedure followed by tuberculous meningitis. In advanced phthisis this condition gives rise to remarkably little trouble, and is best left alone.

BONES OF THE HEAD AND FACE.

Another far from uncommon affection is caries of the lower jaw following caries of a tooth. This does not, as a rule, heal on the removal of the tooth, as generally happens in

healthy people, but requires the removal of the carious bone, and even then a complete cure is seldom obtained. This should be a warning to dentists always to purify their instruments. It is possible that they may infect others with tubercle and so start tuberculous mischief in the glands of the neck. In this connection it is worth while to mention the frequency with which the tuberculous taint has been met with in people affected with actinomycosis; and the danger of mistaking this affection for simple necrosis of the jaw. I have met with one such case, a young lady, coming from a markedly tuberculous stock, and herself the subject of phthisis. In this case it affected the upper jaw, and was cured by scraping, but the phthisis continued to advance rapidly.

Another rare affection I have once met with is perforating necrosis of the skull. A number of fluctuating areas appear on the head, and on evacuating the contained pus a small sequestrum involving the whole thickness of the skull may be picked out of the bottom of the wound. The rapid separation of these tuberculous sequestra is in marked contrast with the tedious process which is the result of syphilis.

PULMONARY OSTEO-ARTHROPATHY.

Besides these cases and those still more accidental ones in which other joint diseases apparently quite unconnected with the chest condition are met with intercurrently, there is an interesting class of cases—if, indeed, it is right to apply the term class to such a heterogeneous group—to which the name of "ostéo-arthropathie hypertrophiant pneumique" was applied by Marie in 1890. In my lectures on empyema, delivered at the Brompton Hospital in 1885, I mentioned amongst the sequelæ of chronic empyema "great clubbing of the fingers, and in some cases similar swellings about the wrists, ankles, and the nose;" and in spite of all that has been written by Friedreich, Saundby, Thorburn, and others with regard to the disease which bears the rather appalling name bestowed upon it by Marie, I cannot help thinking that possibly some of the cases may admit of this simple explanation.

It is a poor satisfaction to be able to claim that one was the first to describe a particular disease, if it is necessary to add that the case was imperfectly observed, and that its real nature was not recognised. I am afraid, however, that this is true; and it is at all events clear that most of the cases which have been reported as examples of the disease have had actual mischief in the joints, and some have suffered from enlargement of the bones. The two cases I shall show you are examples of joint trouble, and one of them is supposed by some who have examined him to have enlargement of the bones.

The first example of it which I met with occurred in the practice of Sir Joseph Lister. A young man had retained for some years in his pleura a long piece of india-rubber tubing which had been imperfectly secured at the time of the original opening. The swelling over the wrists, and knees, and ankles was very marked, as was the clubbing of fingers and toes, and I do not doubt that many would have thought that there was enlargement of the bones and affection of the joints. I cannot indeed prove that such was not the case, but the swelling quite disappeared after the removal of the tube and the closure of the empyema. I have seen several cases since that seemed to correspond exactly with this one, but I have not had an opportunity of observing the disappearance of the swellings on the cure of the thoracic disease, nor of making an examination of the parts after death. Of course I do not know that these would be included by Marie amongst the cases of "ostéo-arthropathie hypertrophiant pneumique," and I do not wish to suggest that there are not cases of enlargement of the bones in connection with chronic thoracic suppurations, but only to emphasise the well-known fact that it is extremely difficult where there is swelling of the soft parts to be positive about enlargement of the bones, a fact which is being constantly illustrated by the dissection of tuberculous joints.

As to these cases being examples of a mild form of tuberculous arthritis, as has been suggested by Thorburn,¹ the mere fact of their occurrence in non-tuberculous patients is to me a strong argument against the truth of his theory. It

seems to me much more likely that they should really be placed in that very indefinite group known as osteo-arthritis. *A priori* it would seem exceedingly probable that this disease should follow on chronic suppuration in the chest in the same way as it is known to do on a chronic urethral or vaginal discharge. But I expect that as the subject is more carefully studied it will be found that more than one condition has been included in the definition, and that is why so many cases fail to correspond at all closely to what has been looked upon as the common type of the disease.

Having said this I will give a short abstract of Marie's description. He is contrasting it with acromegaly, and therefore begins by enumerating a number of symptoms which are not present. For example: The long oval face is not met with. The nose, though large and red at the tip as if from excessive drinking, is not like the huge nose of acromegaly. I would suggest that this is what I have called clubbing of the nose, which I am convinced in a mild form is a very common phenomenon; though as we have no normal human nose to compare others with, it usually passes unnoticed. There is no modification in shape of the lower jaw. There is no modification of the lips, tongue, neck, and larynx.

Amongst positive symptoms he notes the following: A deformity of the upper jaw, consisting of a marked thickening of its alveolar border and its posterior ends, giving a distinct slant to the palatine arch. I do not find this recorded by others. Kyphosis was observed in four out of eight cases in the lumbar and lower dorsal regions, and not in the cervical and upper dorsal regions as usually occurs in acromegaly. It is said to be a late phenomenon, and occasionally to present a triangular pyramidal form.

A natural comment suggested by this last expression, as well as the appearance of some of the illustrations to the papers of those who have written on this disease, is that possibly in some of the cases caries of the spine may have been present. Another fair criticism is that great caution must be exercised in generalising from a few cases of curvature of the spine in pulmonary affections, seeing how extremely common it is for the chest condition itself—for instance, an empyema—to modify the shape of the vertebral column on its own account. I also believe that lumbar kyphosis may be simply the result of prolonged dorsal decubency in bed.

Retrosternal dullness is said to be frequently present, and is supposed to be due to enlargement of the bronchial glands. I need not point out that retrosternal dullness is, unless very marked, a physical sign of very doubtful significance until it is explained by a *post-mortem* examination. It might also be suggested that enlargement of the bronchial glands may well be an "accident" of the pulmonary disease rather than an "accident" of the arthropathy.

The hands are said to be truly enormous—more striking in their size than those of acromegaly. They are also deformed. The fingers present the greatest changes. They may be a little lengthened. The enlargement is principally noticed in the terminal phalanx, which is considerably swollen and bulbous, so that relatively and actually it is the most hypertrophied of the three. The nail is widened, lengthened, and much curved. It is marked by longitudinal striations, and is disposed to become split or cracked in the long diameter, and has a marked rosy colour at the peripheral extremity. The distal phalanx has a tendency to become hyperextended. It is needless to observe that with the exception of the longitudinal splitting of the nail this description would apply almost exactly to fingers which show marked clubbing (*digiti Hippocratici*).

The hand proper is said not to depart, perceptibly as regards size, from the normal hand, except that there may be a little hypertrophy of the ends of the metacarpal bones, which I would suggest might well be some thickening of the soft parts in the neighbourhood of the metacarpo-phalangeal joints. The wrists are said in all cases to have been enlarged; and this enlargement is said to have been due to an abrupt enlargement of the ends of the bones. I can only repeat that where there is thickening of the soft parts, as there has certainly been in some of the cases that have come under my notice (though most observers deny its existence in the cases recorded by them), it is acknowledged to be most difficult—indeed, almost impossible—to estimate the size of

the subjacent bones. The experience of years does not enable one to do it, and until the enlargement has been demonstrated with the aid of the Roentgen rays, one may be excused for remaining sceptical in face of the fact that in my first case (the genuineness of which may, perhaps, be questioned, however) the enlargement of the wrists and ankles, like the clubbing of the fingers, quite disappeared on the cessation of the discharge. I need not say this scepticism does not apply to those cases where the bony enlargement is quite obvious or has been demonstrated *post mortem*.

The changes in the foot and ankle and the lower part of the leg are said to be even more marked than those in the upper extremity, so that the foot in some cases has assumed quite elephantine proportions. All the long bones are said to suffer in the same way, especially at their articular extremities, and the knees and elbows to a less extent but in the same way as the wrists. The hips were possibly also in some cases slightly affected. All the joints are said to have their movements slightly impaired.

These may be said to be unfair criticisms, seeing that there are records of a few *post-mortem* examinations. "The only anatomical descriptions"—I quote from Thorburn's paper mentioned above—"which we have are those of Rauzier Thérèse (recorded by Lefebvre) and Bamberger."

Rauzier records one case,² that of a man who for fourteen years before his death suffered from a discharging empyema. This man's father "était, paraît-il, pourvu d'extrêmes très volumineuses; ses mains et ses pieds offraient un calibre absolument anormal." With regard to the patient himself, it is said, "La seule anomalie qu'il ait jamais constatée, consiste dans l'exagération de volume de ses mains et de ses pieds, qui était déjà frappante dans son bas âge." During the last five years of his life, "un accroissement progressif et actuellement considérable des deux poignets au niveau de leur face dorsale est venu se joindre à l'hypertrophie congénitale des extrémités." At the *post-mortem* examination, ulceration of cartilages and slight excess of synovial fluid were found in knee and elbow. The articular extremities of the bones were large, as were the bones of the carpus and tarsus; but on section did not show any appreciable alteration of structure.

This case can therefore hardly be adduced as an example of pathological enlargement of the bones.

On the other hand Bamberger³ records 11 cases of swollen joints associated with pulmonary disease, in some of which it was combined with heart mischief. In 7 of them *post-mortem* examinations were made, and in 5 out of the 7 some periostitis was found near the articular ends of the long bones.

This is a very remarkable observation. It calls to the mind the term *periosteal rheumatism*, and makes one regret that no mention is made of syphilis in any of the cases, and suggests that this point should by no means be omitted in future observations on the subject.

In the case of Thérèse, of which an account is to be found in Lefebvre's *Thèse de Paris*, No. 130, 1891, Des Déformations Ostéo-articulaires consécutives à des maladies de l'Appareil Pleuro-pulmonaire, there is described "une ostéo-periostite, avec ostéite condensante et raréfiante avec activité énorme des éléments médullaires, qui dans les parties centrales entrent rapidement en dégénérescence graisseuse. Au point de vue clinique, la perversion consiste en l'abondance considérable des sels de magnésie et de la graisse."

Some of the confusion no doubt depends upon the celebrated—I had almost said notorious—brothers Hagner, whose "literary existence," as Dr. Julius Arnold says, began in 1868, when they were first described by Friedreich as examples of "Hyperostose des gesammten Skelets."⁴ They have been considered to be examples of more than one disease, and have been, so to speak, a bone of contention amongst pathologists for almost thirty years, and now at last the elder of the two has "become the subject for anatomical investigation."

When Marie first introduced acromegaly to the world he claimed the brothers as examples of the disease; but later, when "ostéo-arthropathie hypertrophique pneumique" saw the light, he considered that they should more properly be included in the latter category. And now Julius Arnold's most elaborate necropsy seems to settle the point that the elder brother, at all events, was the subject of acromegaly; but unfortunately in the meantime some of the clinical features presented by him (perhaps the enlargement of the upper jaw, for example) have, if I mistake not, crept into what is looked upon as the classical—because the first—description of the disease we are discussing. Hence, also, the invariable custom of contrasting it with acromegaly, a disease which seems to me to have remarkably little in common with it.

(To be continued.)

² *Revue de Médecine*, 1891, p. 30.

³ *Zeitschrift für klinische Medizin*, 1891, p. 193.

⁴ Acromegalie, Pachyacrie oder Ostitis, Beiträge zur pathologischen Anatomie, Ziegler, 1891, I.