

any distinct headache or any interference with vision; but, when the giddiness was severe, there were in some instances cold clammy perspiration and feeble pulse.

The physiological action of the acid in various doses was noted in health and in different morbid conditions. In health, the only effect which was observed to follow moderate doses—four to six minims—was the production of a peculiar greenish tint in the urine, and the disappearance of all deposits of lithates. Both these phenomena were most marked when full doses—eight or ten minims—were given, and in themselves were very remarkable. The intensity of the greenish tint varied considerably. Apparently it was more influenced by the state of the urine than by the mere dose of the acid; but the disappearance of the lithates from the urine bore a tolerably constant ratio to the dose of the acid, so that, if the administration of four or five minims failed to produce the desired effect, the addition of three or four minims to each dose would in most instances accomplish it within three or four hours. Indeed, carbolic acid proves so powerful an agent in clearing the urine of lithates, that it will operate with tolerable certainty in cases in which moderate doses of alkalies fail altogether in checking the deposit. It does not increase or diminish the secretion of urine, nor does it appear to exercise any influence on its specific gravity; it does not affect the action of the bowels, though it diminishes the offensive odour of the motions; it has no effect on the temperature of the body, nor does it influence the pulse, except when it is given in excessive doses and excites giddiness and cold perspiration, and then the pulse is accelerated.

Having remarked the uniformity of the action of the acid in checking the deposit of lithates, and thinking that possibly it might control the formation of lithic acid, I administered it in full doses in several cases of gout. It certainly rendered the urine clear, but it did not appear to modify the gouty action or check its continuance. The same may be said of its action on rheumatism.

In dyspeptic cases—of the fermentative class—accompanied by the copious evolution of gas from the stomach and the discharge of fetid evacuations from the bowels, its effect is often most satisfactory. Administered in six or eight-minim doses it stimulates and is extremely grateful to the stomach; it causes an immediate evacuation of flatus, and, by checking fermentation, it puts an end to the evolution of gas which forms the most distressing feature of many varieties of dyspepsia. With the exception of charcoal, I know of no remedy so useful in these cases, and it not unfrequently operates beneficially even when charcoal fails to relieve.

In typhoid or gastric fever, in which, *a priori*, beneficial results might have been expected from its employment, I have been unable to observe any controlling influence. The temperature keeps up, and the disease runs its course utterly unchecked by even full and repeated doses. In a case, James J., now under my care at St. George's Hospital, ten minims were taken every three hours for eighteen days, and throughout that time—from the sixth to the twenty-fourth day of the attack—the temperature ranged from 99 to 104—being 102 at the beginning and fully 102 at the end of the time. In several other cases of typhoid fever and also in cases of typhus, I have noted the same absence of controlling power.

In scarlatina, accompanied by sloughing throat, I have employed it on one occasion, and fancied that it proved beneficial. Having regard to the action of the scarlatinal poison on the mucous membrane of the stomach, it is not unlikely to prove active for good, and certainly deserves a trial.

In the form of spray, I have used a solution varying in different cases from five to ten minims of the acid to an ounce of water for the purpose of inhalation. It has been employed in the early and advanced stage of phthisis—in so-called laryngeal phthisis, in chronic bronchitis, in gangrene of the lung, and in various affections of the throat, including diphtheria. In the last named, it does not prove so useful as the pure solution of permanganate of potash administered in the same way, which sometimes appears to exercise a magical effect in clearing the throat of the membrane; but in all the other forms of complaint it exercises in many instances a decidedly beneficial influence. It lessens the irritability of the mucous surface and facilitates expectoration, and the patients aver that it affords relief. In gangrene of the lung, it removes the fetid odour, and otherwise appears to be productive of good.

The only disagreeable symptom which I have observed to follow its employment in the form of spray, has been occasional faintness when the inhalation has been continued too long. The time at which this faintness occurs varies greatly in different cases, and I therefore instruct the patient to desist from inhaling as soon as the slightest discomfort arises. My impression, however, is, that this faintness is not induced by the action of the acid, but rather by the abnegation of atmospheric air which attends inhalation with Siegle's apparatus; for, in every instance except one in which I have observed it, Siegle's steam-apparatus was

being employed. I therefore prefer using the common hand-bellows, previously heating the solution of acid if the inhalation of cold spray seem likely to be prejudicial.

## LETTSONIAN LECTURES

DELIVERED BEFORE

THE MEDICAL SOCIETY OF LONDON  
IN 1869.

By WILLIAM ADAMS, F.R.C.S.,  
Surgeon to the Royal Orthopædic and Great Northern Hospitals, etc.

### LECTURE III.

*Strumous Diseases of the Joints; their Pathology and Treatment. Also the Treatment for the Restoration of Motion in Cases of Stiff Joint, or Partial Anchylosis.*

STRUMOUS diseases of the joints were first considered in reference to their general pathological characters, which Mr. Adams described as—1. The essentially chronic character of the inflammation—chronic, or, at utmost, subacute from the beginning, and maintaining this character through the whole duration of the disease, generally extending over several years; and 2. The tendency of the inflammation towards the destructive processes of suppuration and ulceration in the soft tissues, and to caries and necrosis in the bones, thus invading all the structures of the joints.

In this class of joint-diseases, we see inflammation occurring essentially as a destructive process, leading to the complete destruction of the joints; and, unless arrested in its early stage by judicious treatment, terminating in loss of all the functions of the joint, and ankylosis as its most favourable result, and in a large proportion of cases leading either to amputation of the limb, or the more modern operation of excision of the joint, as the only chance of saving the limb or life of the patient. As to the order in which the several structures are invaded, and the liability to primary inflammation, the general tendency of surgical opinion is to the belief that strumous disease of the joints most frequently commences in the cancellous structure of the articular extremities of the bones, and this is probably due to the teaching of Sir B. Brodie, who laid much stress upon this form of disease. Mr. Adams's observation, however, has led him to the opinion that strumous disease of the joints commences most frequently in some of the ligaments of the joints, as the result of an injury, and that from these structures it extends to the synovial membrane. Next to the ligaments, he believes that strumous disease most frequently commences in the synovial membrane, as the result of exposure to cold and damp; and thirdly, in order of frequency, that strumous disease commences in the cancellous structure of the articular extremities of the bones, as the result of exposure to cold and damp, and that the disease then generally takes the form of necrosis.

Dissections of hip-joint disease in the first stage, recorded by Mr. Aston Key, Mr. Coulson, and Mr. Adams, were adduced as examples of disease, limited to the round ligament and adjacent synovial membrane, without general synovitis, ulceration of cartilage, or disease of the bones; and Mr. Adams observed that, in a large number of such cases, a reliable history of some accident is given, as preceding the joint-affection, and in all probability laying the foundation of the disease. With regard to the curability of strumous disease of the joints, there can be no doubt that, so long as the affection is limited to the synovial membrane, in the ordinary form of chronic inflammation, and the ligaments have not been destroyed, it admits of being cured, with restoration of motion to the joint; although the treatment may be very tedious, extending from a few months to perhaps two or three years. When the articular cartilages are to any considerable extent destroyed, it is no longer possible to restore motion, and the best result obtainable is fibrous ankylosis, leading ultimately to bony ankylosis.

From the disposition of the bone-disease to advance when this texture is much implicated, the prospects of ankylosis are remote and uncertain. Under favourable circumstances it may sometimes be obtained, but frequently fails, and amputation or excision must be resorted to. Amongst the poor, operative means may be adopted at an earlier period than in the wealthy class, time being a more important object; and Mr. Adams preferred excision at a comparatively early period, and before the local disease had exhausted the powers of the patient.

The treatment of strumous disease of the joint in the early stage, during which it is alone possible to obtain complete restoration of the joint, must be both constitutional and local. All active local treatment

is at once negated when the strumous constitutional condition of the patient is recognised; and these cases, Mr. Adams considered, were no longer to be treated by leeches, blisters, issues, moxas, the actual cautery, etc.; but all these methods of depletion and counterirritation, still adopted by some surgeons in England, and more frequently by our continental neighbours, should be laid aside, and the object of local treatment limited to securing rest to the joint by means of gutta-percha splints, etc., together with the application of perpetual warmth and moisture, by wet lint covered with oiled silk, aided by the use of the local vapour bath for a quarter of an hour three times a day. In this way local rest or rest to the joint affected is always secured, whilst general exercise is at the same time permitted. In disease of the ankle-joint, or its neighbourhood, the use of a wooden leg contributes best to this result; and, in disease of the knee or hip-joint, the use of crutches should be insisted upon as early as possible.

It is only in the later stage, when there is no decided increase of heat in the inflamed joint, that Mr. Adams resorts to the application of blisters, tincture of iodine, Scott's ointment, etc.

The constitutional treatment consists in the administration of cod-liver oil, iron, quinine, and strychnine. Mr. Adams entertains a high opinion of the usefulness of the hypophosphite of lime, in doses of from five to ten grains, with ten or twenty drops of the tinctura ferri, in water, three times a day, directly after meals. He also advises residence at the sea-side, on chalk hills, or in mountain air. With these hygienic advantages, and mild local treatment, the disease may be arrested in a large number of cases.

The next subject discussed was the *Treatment for the restoration of motion of a stiff joint, or partial ankylosis, by forcible flexion and extension under chloroform.* After alluding to the history of this operation, Mr. Adams stated that when appropriate cases are selected, having reference especially to the constitutional condition of the patient, and the cause of the ankylosis; and when the operation is done with proper precautions, and with less violence than is sometimes used, there appears to be no risk whatever of inflammatory mischief following the operation. The absence of inflammation, and especially of suppurative inflammation, as a result of the operation, is, in a great measure, to be explained by the subcutaneous nature of the injury inflicted; and, in this respect, it may be classed in the same category with dislocations and simple fractures, which are seldom, ever, followed by suppurative inflammation.

One of the principal points which had engaged Mr. Adams's attention had been to determine the particular class of cases to which this treatment is applicable, and those in which it is either attended with danger, or in which it would probably fail in its object of restoring motion; and, with this view, he arranged all cases of partial ankylosis, or stiff joint, in three classes, viz., 1st, strumous; 2nd, rheumatic; and 3rd, traumatic.

With regard to the *first class*, the strumous, the result of Mr. Adams's experience has been to prove that they are the most unfavourable for treatment by forcible extension. In any scrofulous disease of a joint, where there is reason to believe that the articular cartilages, and other structures of the joint have been much damaged—and in scrofulous diseases the articular cartilages are, as a general rule, destroyed to a greater or less extent—a stiff joint is certainly the best possible result for the patient; and to obtain this should be the object of the surgeon, every care being taken to secure ankylosis, with the limb in the most useful position. Any attempt to recover the lost mobility can only be made at the risk of producing serious inflammation; and if free motion should be obtained under chloroform, and no serious inflammation follow the procedure, the motion will not be permanently retained, owing to the damaged condition of the joint. Stiffening will gradually return, and the case must be considered a failure.

With respect to the *second class of cases*—the rheumatic—the result of Mr. Adams's experience has been as favourable as it has been unfavourable in the strumous class. In a large proportion of cases of stiff joint, or ankylosis, occurring in young adults after rheumatic fever, or as the result of that severe form which occurs during the progress of gonorrhoea, free and useful motion may be restored by forcible rupture of the adhesions, and thickened ligamentous tissues.

There is one great peculiarity in the rheumatic form of inflammation, in whatever organ or structure it may occur—viz., a remarkable indispotion to suppuration; and this is, in the highest degree, favourable to the operation of forcible extension of joints, the tendency of rheumatic inflammation being to the adhesive form.

In the *third class of cases*, viz., the traumatic, the results of forcible extension are also generally favourable, though more uncertain, and, on the whole, not quite equal to the results obtained in the rheumatic class.

The conclusions arrived at by Mr. Adams, are as follows. 1. Forcible flexion and extension, under chloroform, of a stiff or partially

anchylosed joint—false or [fibrous ankylosis—is a procedure attended with very little risk, in properly selected cases, and when the force employed by the surgeon, and the subsequent movements, are not excessive, more especially at the first operation.—2. The cases should be selected with reference more especially to the constitutional condition of the patient, and the integrity of the articular cartilages.—3. Cases of partial ankylosis, resulting from scrofulous diseases of the articulation, and those proceeded by suppurative inflammation within the joint, whether occasioned by phlebitis, febrile affections, or external injury, are the least favourable for treatment.—4. The cases of partial ankylosis, produced by acute rheumatic inflammation, especially when occurring in the adult, and those resulting from gonorrhoeal or genital rheumatism, are the most favourable for treatment.—5. Traumatic cases, or those resulting from external injury, when occurring in the adult, and unaccompanied by suppurative inflammation, are also favourable for treatment in a large number of instances.

## IPECACUANHA IN EMETIC DOSES :

AS A STIMULANT, RESTORATIVE, ELIMINATIVE, AND ADJUVANT, IN VARIOUS CASES OF DISORDER AND DISEASE.

By JOHN HIGGINBOTTOM, F.R.S., Nottingham.

[Continued from page 144 of last number.]

*Bronchitis.*—Vomiting by the use of ipecacuanha in the early stage of bronchitis is very beneficial. This has been, I have no doubt, the common experience of other practitioners; but giving it in the last stage of bronchitis may not have been practised. I have never known it to be recommended. When a sudden low congestive or sinking state has come on, attended with an oppression of the chest, and endangering asphyxia, an emetic of ipecacuanha has not only soon relieved these dangerous symptoms, but has roused the whole system and produced such a change, as to render the patient convalescent in a few days. I have not seen the same beneficial effects produced in similar cases by any other remedy.

The two following cases, which I published in the *Lancet* more than twenty years since, are of that description.

Mr. D., aged 60, an innkeeper, of a gross habit, but not considered intemperate, had been much reduced in consequence of a neglected erysipelatous inflammation of the leg and thigh; this had in some measure subsided; but he had a troublesome cough, great dyspnoea, and difficult expectoration. A sudden state of sinking came on, with an increased dyspnoea, and quick feeble pulse. I gave an ipecacuanha emetic; he vomited at intervals for two hours, and the lowness and dangerous symptoms were much relieved; he had no relapse of the low or sinking state, and he gradually recovered under a common mild regimen.

Mrs. C., aged 78, had an attack of influenza prevailing at that time; saline aperients, with diaphoretics and expectorant medicines, had been given for about five days, when a sinking state came on, with difficulty in breathing. I was inclined to give an emetic of ipecacuanha as the most probable remedy. I was glad to find my patient would take it; and I may here mention the favourable idea which patients sometimes have of an emetic, imagining that vomiting enables them to throw up the phlegm. I gave her the usual emetic, which had the desired effect of completely relieving her. It was only necessary to visit her five more days, she being then quite convalescent.

*Tic Douloureux.*—In common cases of tic douloureux or neuralgia, the practice which I have pursued is to commence with an emetic of ipecacuanha and aperients, then to give an efficient dose of the citrate of iron and quinine three times a day. This practice I have found most successful. Some patients will not take the emetic to commence with, but will take the tonic; this has been persevered in for some time without amendment. The emetic is then taken, and afterwards the tonic continued for a short time, when the complaint subsides.

*Periodical Drunkenness.*—It is observed that, in the intervals between the periods of the attacks of drunkenness, the person is quite sober, and often remains so for three or four months, or for a longer time. When the mania comes on, the intense desire for alcoholic stimulants is so strong, as to render the sufferer subject to no control; and, from the sensation of depression and sinking, he looks upon alcoholic stimulus as his only remedy. When a person is in this state, it will always be found that his stomach is in fault, and the unnatural appetite arises from that cause alone. If half a drachm of the powder of ipecacuanha be taken, so as to produce full vomiting, the desire for alcoholic drinks is immediately removed.