FURTHER OBSERVATIONS
ON THE
ULCERATION
OF THE
CARTILAGES OF JOINTS.

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I.

IN my former communications to this Society, I have observed that ulceration of the articular cartilages takes place in the advanced stage of any of those diseases to which the joints are liable, in consequence of the morbid action extending to them from the contiguous parts; and, that it also exists in many instances as a primary affection, in the early stage of which the bones, synovial membranes, and ligaments are in a natural state, but which, if neglected, ultimately occasions the entire destruction of the articulation. In the present paper I propose to offer some remarks on the

symptoms which occur in cases of this last description, and on the surgical treatment which has appeared to me to be most calculated to afford relief to the malady. It is not, however, my intention to exhaust the patience of the Society by a systematic treatise on these subjects, but to confine myself to the consideration of certain practical points to which my attention has been called by the circumstances which have occurred in my own experience.

The ulceration of the articular cartilages takes place at any period of life, but principally in children or in adults under the middle age. Of sixty-eight persons affected with this disease, fifty-six were under thirty years of age: the youngest was an infant of about twelve months; the oldest was a woman of sixty. As the knee is more frequently affected by inflammation of the synovial membrane, so is the hip more liable than other joints to the ulceration of the cartilaginous surfaces. In general the disease is confined to a single joint, but it is not very unusual to find two or three joints affected in the same individual, either at the same time or in succession. Sometimes the patient traces the beginning of his symptoms to a local injury, or to his having been exposed to cold: but for the most part no cause can be assigned for the complaint, and often the cause, to which the patient attributes it, appears to be rather imaginary than real.

Where the hip is affected, the only symptoms met with for some time, are pain and a slight degree of lameness in the lower limb. The pain at first is trifling and only occasional, afterwards becoming severe and constant. It resembles the pain of rheumatism, from which it is difficult, and sometimes impossible to distinguish it; since it often has no certain seat, but is referred to different parts of the limb in different individuals, and even in the same individual at different times. For example, a gentleman labouring under this disease in the hip, complained during a whole year of slight wandering pains from the loins to the foot; at the end of this time, there was a violent pain referred to the hip, knee, and outside of the leg, as low as the ankle. A man in St. George's Hospital, had pain in the hip for three months; then pain took place in the knee, that in the hip being still unabated. A third patient laboured under pain in the hip, and at the end of four months, pain took place in the knee likewise. In a fourth, there was, at first, pain in the ankle only; then in the knee and thigh, and lastly in the hip. As the disease advances, the pain becomes exceedingly severe, particularly at night, when the patient is continually roused from his sleep by painful startings of the limb. Sometimes he experiences a relief from pain in a particular position of the joint, and in no other. A patient in St. George's Hospital for some weeks, never obtained any rest, except when he had placed himself on the edge of

his bedstead, with his feet on the ground, and resting his body on the pillow, in a position between that of lying and sitting. As the pain increases in intensity, it is more confined in its situation. In the greater number of instances it is referred both to the hip and knee; sometimes that in the hip, but more frequently that in the knee, being the most severe. At other times there is pain in the knee and none in the hip. A boy in St. George's Hospital complained of pain only in the inside of the thigh, near the middle: and another patient, a little girl, referred the pain to the sole of the foot. Wherever the pain is situated, it is aggravated by motion of the hip. There is tenderness of this joint when pressure is made on it, either before or behind; and as the disease advances, there is usually a slight degree of tumefaction of the groin. In this there is nothing remarkable, since we must suppose, that a disease going on within the articulation must ultimately occasion some degree of inflammation of the neighbouring soft parts; but it is a curious circumstance, that in some cases there is tenderness of those parts, to which, though not diseased themselves, the pain is referred from sympathy with the disease in the hip. I have observed this in the knee many times; and a gentleman in whom the pain was referred to the outside of the leg, had great tenderness every where in the course of the peronæal nerve. I have also (though not often) seen a slight degree of puffy swelling of the knee, where pain was

referred to it in consequence of disease in the hip. These facts correspond to what may be observed in other cases, where pain is referred to a sound part, from a sympathy existing between it and some other part that labours under disease: for example, the passage of a calculus down the ureter occasions not only pain, but tenderness, swelling, and no trifling inflammation of the testicle.

When the disease has existed for some time, and the pains have become violent, so as to interfere with the exercise of the joint, the nates on the affected side undergo a remarkable alteration in their form. They become wasted and less prominent, so that instead of the usual convexity, they present the appearance of a flattened surface: at the same time they are soft and flaccid to the touch, and hang more loosely towards the lower edge. I have, in a former communication, explained that this change in the figure of the nates arises from the wasting of the glutæi muscles: and that, although, in combination with others, it is an important symptom to be attended to; it is not in itself to be regarded as a certain diagnostic mark of disease in the hip, since in its early stage this symptom is wanting; and it is met with in other diseases, in which the muscles in the neighbourhood of the hip are for a long time not called into action, although the joint itself is unaffected.

Another symptom, which occurs in this disease,

is an alteration in the length of the limb. 1. In the most advanced stage, when the head of the femur and the bony margin of the acetabulum have been extensively destroyed, there is nothing to prevent the action of the glutæi muscles from drawing the head of the femur upwards, and in consequence the limb is shortened, as where the neck of the femur has been fractured. 2. In some cases the joint being filled with coagulable lymph, while there is no considerable destruction of the bones, the head of the femur is pushed outwards, till it is beyond the margin of the acetabulum, when the muscles pull it upwards, and occasion a dislocation upwards and outwards. The limb is here shortened, the thigh is bent forwards, and the toes are turned inwards, as where the dislocation in the same direction takes place from any other cause. I have mentioned, in a former paper, some instances of this kind of dislocation, where there was an opportunity of examining the parts after death*. The shortening of the limb, which occurs from either of these causes in the advanced stage of the disease, is always a serious symptom, as it is in general either attended with, or followed by, the formation of an abscess in the articular cavity.

3. In the earlier stage of the disease the patient often complains that the limb of the affected side is longer than the other. This can not be ex-

* See Medico-Chirurgical Transactions, Vol. IV. pp. 240, 249.

plained on the supposition of the acetabulum being filled with matter or solid substance, since this would cause the head of the femur to be pushed outwards rather than downwards. The fact is, that there is only an apparent and no real elongation of the limb. If the patient be placed on his back in a horizontal position, both thighs making the same angle with the pelvis, the foot on the diseased side may at first appear to be as much as two or three inches lower than the opposite foot ; but if the distance be accurately measured from the anterior superior spinous process of the ilium to the patella, no difference is perceptible. The apparent elongation is produced by the position of the pelvis being altered, so that it no longer makes a right angle with the spine, and the crista of the ilium is visibly depressed below that of the opposite side*.

4. In other cases from a similar cause, there is an apparent shortening of the limb, the pelvis being inclined in the opposite direction. Two children were admitted into St. George's Hospital at the same time, and in the same stage of this disease in the hip. In other respects their symptoms were precisely similar, but in one of them there was an apparent shortening, and in the other an apparent elongation of the affected limb. It is of great im-

* This fact (respecting the elongation of the limb,) I noticed several years ago, and I have since found that the late Mr. Crowther had made the same observation before the period at which I made it myself. See "Crowther on White Swelling," 2d edition.

portance with respect to the prognosis, to distinguish the apparent shortening of the limb in the early stage, from the real shortening which takes place in the advanced stage of the disease, since the latter is a very serious symptom, indicating the formation of an abscess with all its train of bad consequences ; and the former furnishes no ground of alarm respecting the ultimate termination of the case.

The health of the patient usually suffers, even before abscesses have formed, from the want of exercise, pain, and particularly from the continued disturbance of his natural rest. I recollect no instance of an adult in whom abscesses had formed, and who did not ultimately sink exhausted by the hectic symptoms which these have induced. Children may recover in this ultimate stage of the disease, but seldom without a complete ankylosis of the joint. If suppuration has not taken place, I believe it rarely happens that the limb after the cure does not regain its natural degree of mobility*.

* However difficult the diagnosis of this disease of the hip may be in its early stage, it may be made with sufficient certainty when the disease is somewhat advanced. It is to be founded however not on a single symptom, but on the combination of symptoms, and on the history of their progress, so that no degree of experience can enable a surgeon to form his judgment correctly without a careful investigation of the circumstances of the case before him. The morbid affections most liable to be confounded

Where the cartilages of the knee are ulcerated, the pain is confined to the affected joint: at first it is slight and only occasional, and in the early stage of the disease it is completely relieved by remaining in a state of rest for a few days, but it returns as soon as he resumes the exercise of the limb. By degrees the pain becomes constant and

confounded with the ulceration of the cartilages of the hip are the following:

1. Inflammation of the synovial membrane of the hip, of which I have spoken in my former papers.

2. Chronic inflammation of the soft parts in the neighbourhood of the hip, terminating in the formation of a chronic abscess. Here there is pain, but more confined in its situation, than where the cartilages of the hip are ulcerated: the pain is less severe; less aggravated by the motion of the joint; not relieved in the same degree by rest; not attended by a flattening, and very soon followed by a tumefaction of the nates.

3. The scrophulous disease which I have described in the Fourth Volume of the Medico-Chirurgical Transactions, beginning in the cancellous structure of the bones and afterwards occasioning ulceration of the cartilages, may affect the hip as well as the other joints. On this subject I hope to be able to offer some remarks in a future communication.

4. I have seen several cases, in which I suspected the symptoms to depend on a morbid affection of the sciatic nerve: and in which they bore a certain analogy to those of the disease in question. There was pain referred to the parts, to which the sciatic nerve is distributed; but not very severe nor materially aggravated in consequence of the disease being neglected. There was tenderness in the situation of the nerve on the posterior part of the hip and thigh: the tenderness being sometimes more considerable in one part than in another. The symptoms were relieved principally by the application of blisters over the trunk of the nerve, which was suspected to be the seat of the malady.

very severe, particularly at night, when it disturbs the patient by continually rousing him from his sleep. The pain is referred principally to the inside of the head of the tibia; is aggravated by motion, so that the patient keeps the limb in one position; but is unattended by any actual rigidity or stiffness of the joint, except in an advanced stage of the disease.

The ulceration of the cartilages of the knee differs with respect to its symptoms from inflammation of the synovial membrane in this, that the pain in the former is slight in the beginning, and gradually becomes very intense, which is the reverse of what happens in the latter. But there is another circumstance which forms a remarkable distinction, between the ulceration of the cartilages, and most other diseases, to which this joint is liable. The pain in the first instance is unattended by any evident swelling, which comes on never in less than four or five weeks, and often not till several months have elapsed from the commencement of the disease. The reason of this is too evident to require explanation, and it is equally unnecessary to point out the importance of it, as affording the means of making a more ready diagnosis. We must not indeed conclude indiscriminately, wherever there is a slight pain in the knee unattended by swelling, that the cartilages are in a state of ulceration, since it is evident that this symptom may equally arise from inflammation of the bones themselves, of the liga-

ments, of the fatty substance of the joint, or from simple nervous affection; and instances will occur to every surgeon, where there is reason to believe that the above-mentioned symptom arises from one or other of these causes. But when the pain continues to increase, and at last is very severe; when it is aggravated by the motion of the bones on each other, and when after a time a slight tumefaction of the joint takes place, such as I shall presently describe, we may conclude that the disease consists in an ulceration of the cartilaginous surfaces; and in all such cases, which have come under my observation, their subsequent progress, and the morbid appearances presented by dissection, when an opportunity has occurred of observing them, have fully confirmed this conclusion.

The swelling, which attends this disease in the knee, differs from that, which occurs in either of those of the synovial membrane, which I have formerly described. It arises from a slight degree of inflammation having taken place in the cellular membrane external to the joint, in consequence of the disease within it. The swelling is usually trifling, appearing greater than it really is in consequence of the wasting of the muscles of the limb. It has the form of the articulating ends of the bones; that is, the natural form of the articulation. No fluctuation is perceptible, as where the synovial membrane is inflamed; nor is there the pe-

cular elasticity, which exists where the synovial membrane has undergone a morbid alteration of its structure.

But a few cases occur in which the tumour arises from fluid being collected in the joint; and in which therefore it has a form different from that which has been described, and giving to the hand a distinct feeling of fluctuation. 1. Inflammation of the synovial membrane may occur as a secondary disease, ulceration of the cartilage having preceded it, and the effusion of synovia into the joint being the consequence of it. This I suppose to have happened in the case of John Child related in another part of this paper. 2. In an advanced stage of ulceration of the cartilages, when an abscess is formed, it occasions ulceration of the soft parts, and usually makes its way to the skin; but sometimes the pus is collected in the joint distending the synovial membrane, and causing a tumour very similar to that, which takes place from it being distended with synovia. If an accurate history can not be procured, (as very frequently happens) the surgeon must resort to other means of ascertaining whether the fluid collected in the joint be purulent or otherwise. Blisters may be applied, which very seldom fail to procure the absorption of the too abundant synovia, and never cause the absorption of pus. At a certain period of the disease, the fluid may even be evacuated by a puncture with a lancet, so as to put its nature beyond the reach of doubt. If it

prove to be synovia, and the puncture be made with caution, and the wound healed, no ill consequences will arise; and if it be pus, the evacuation of it may be useful in the child, and in the adult it enables us to ascertain that there is no chance of the ultimate preservation of the limb.

As the ulceration of the cartilages is sometimes followed by dislocation of the hip, so we find that dislocation occasionally takes place from the same cause in the knee. When there has been considerable destruction of the soft parts from abscesses and ulceration, the head of the tibia is gradually drawn backwards by the action of the flexor muscles, and lodged in the ham. The condyles of the femur make an unusual projection, and the articulating surfaces of the bones are partially or entirely separated from each other.

The symptoms produced by the ulceration of the cartilages of other joints correspond very nearly to those already described. The principal diagnostic mark is the pain, which is experienced in the beginning unattended by swelling. The pain is referred entirely to the part, which is the actual seat of the disease, except where the elbow is affected, in which case the more violent pain in this joint is accompanied by a slighter degree of pain in the wrist. In the very few instances, in which I have met with the disease in the shoulder, instead of being swollen, the joint has appeared

smaller than natural, in consequence of the wasting of the deltoid muscle.

The progress of the ulceration of the cartilages varies with respect to time, in different cases; but it is generally tedious. In one case where violent pain had existed in the knee with little or no swelling for two years and a half previous to amputation, I had an opportunity of examining the affected joint; and found the cartilages destroyed only for a small extent; a drachm and a half of pus in the articular cavity; and no morbid appearances in the soft parts, with the exception of a very slight inflammation, which had been induced in the synovial membrane, and the effusion of a minute quantity of coagulable lymph into the cellular texture on its external surface. I have already mentioned an instance, in which the pains in the lower limb existed for a whole year before they were sufficiently severe to attract the patient's serious attention. In this case no pus had formed in the joint, and the ultimate recovery was complete, without the smallest detriment to the motion of the limb. Sometimes however the progress of the disease is much more rapid. There is a man at this time in St. George's Hospital, in whom, in the course of four months, the destruction of the head of the femur and acetabulum was so considerable as to occasion a real shortening of the limb to the extent of an inch.

II.

I have remarked in a former communication that “the improvement of scientific pathology seldom leads to the invention of new remedies.” But pathological investigations may be nevertheless of the highest practical utility, by enabling us to know diseases from each other, which otherwise would be confounded together; to form a more ready and a more accurate opinion respecting their probable termination; to estimate the chance of cure, and the time in which it may be effected; and amid the variety of remedies which may be usefully employed to distinguish what are applicable to one and what to another description of cases.

Where the cartilages of a joint are ulcerated, it may well be supposed that the motion of their surfaces on each other must be favourable to the progress of the ulceration. I have known some cases, in which rest alone was sufficient to produce a cure. In all cases the symptoms of the disease are aggravated by any considerable exercise: and we may therefore conclude that the keeping the limb in a state of perfect quietude, is a very important, if not the most important, circumstance to be attended to in the treatment.

Issues made with caustic have been recommended by many practitioners for the cure of diseased

joints; but, as far as I know, no one has attempted to point out the particular class of cases, to which this remedy is applicable. I have employed caustic issues, and seen them employed in a great number and variety of instances, and have found them to be usually productive of singular benefit where ulceration of the cartilages occurs as a primary disease, but of little or no service in any of the other morbid affections to which the joints are liable*. Setons and blisters kept open by means of the savine cerate appear to operate nearly in the same manner as caustic issues, and may be used with advantage in the same description of cases.

* The immediate relief which sometimes follows the application of caustic to the skin, or surface of the issue, even when the limb is under precisely the same circumstances as before with respect to rest, and the return of the symptoms which in many instances follows the early healing of the issue, sufficiently prove the efficacy of this remedy. It may be difficult to explain the *modus operandi*; but what happens in these cases seems to bear no distant analogy to the suspension of gonorrhœa, by the occurrence of inflammation of the testicle, or the metastasis of the gout from the stomach to the foot. Issues are employed in surgery for the purpose of stopping the morbid actions of the animal body; but it is probable that if made of sufficient extent they would interfere with its natural actions also. In a Guinea pig a large abscess of one leg and thigh took place in consequence of a local injury. The formation of the abscess completely stopped the growth of the claws on the foot of this side. They wore away at the points, without being regenerated at the base, became short and dry, and readily cracked and splintered: while on the foot of the opposite limb they continued to grow as usual, and possessed their ordinary appearance.

In many instances which occur (particularly in hospital practice,) the patient from too freely exercising the limb brings on an inflammation of the ulcerated surfaces of the bones, occasioning an aggravation of the pain, and usually some degree of fever, and here bleeding may be employed with advantage. Under other circumstances I have not known the loss of blood to be productive of much, if any benefit. Indeed I know of no analogy that should lead us to expect benefit from it, since bleeding is not found to possess the power of stopping the progress of ulcers in other parts.

In the early stage the warm bath is of service. At least it is capable of relieving the symptoms, if not of stopping the progress of the disease.

Plasters made of gum-ammoniac and others of a similar nature ; embrocations and liniments of all kinds, are entirely inefficacious. Friction is invariably injurious.

Having premised these general observations, I shall proceed to offer a few practical remarks: first, on the treatment of this disease in the hip, and afterwards in other joints without reference to suppuration having taken place ; secondly, on the plan, which should be adopted where suppuration is established, and there is a collection of pus communicating with the articular cavity.

Where the cartilages of the hip are ulcerated, the patient should in the first instance be confined to a couch, if not to his bed ; and if the disease is far advanced, the limb should be supported by pillows properly disposed, so as to favour the production of an ankylosis, by allowing it to vary as little as possible from one position.

In young children, blisters are capable of affording complete relief. They may be applied on the nates, round the great trochanter, and in the groin. A blister kept open by the savine cerate, is usually more efficacious than a number of blisters applied, and healed in succession.

In children above the age of eight or ten years, and in adults the same treatment is useful in the very early stage of the disease; but in the more advanced stage, issues made with caustic appear to be much more efficacious, and to be attended on the whole with less inconvenience to the patient.

The hollow behind the great trochanter of the femur is in many respects the most convenient situation for the application of the caustic ; but in some instances the application of it on the outside of the hip is attended with better effects. The skin at this part is in fact nearer to the joint than the skin behind ; and there are some grounds for the opinion, that issues are more efficacious when made

near to the seat of the disease, than when made at a distance from it*. The skin in the groin is still nearer to the hip than that on the outside, but the large vessels and nerves of the thigh forbid the use of the caustic at this part. A slough may be made with the *potassa fusa*, in the adult, half an inch in breadth, and two inches in length, behind the great trochanter. If this fails in giving relief, a second slough of a smaller size may be made on the anterior edge of the *tensor vaginae femoris* muscle : and in some instances though no relief is afforded by the first issue, there is great relief from the second.

The good derived from the issue does not seem to be in proportion to the quantity of pus discharged from its surface. It has been observed by others, that sometimes more abatement of the symptoms is produced in the first few days after the caustic is applied, and before the slough has

* " I have for many years applied caustics above and below the internal condyle of the thigh-bone, for white swellings in the knee, with various success ; and I have remarked, where this plan disappointed my hopes, and where a suppuration took place in the joint, that the inflammation in almost every case arose, and that the matter collected generally made its way outwards, on the external side of the knee. Observing this fact repeatedly, I was led to conceive that the caustic, in the manner I used it, checked the progress of the disease, as far as it had influence ; but that that influence was not sufficiently powerful to pervade the whole cavity of the joint." Ford on the Hip Joint. P. 194. First Edition.

separated, than in several weeks afterwards. This circumstance first led me, instead of employing beans for this purpose, to keep the issue open simply by rubbing the surface with the caustic potash, or the sulphate of copper, twice or three times in a week; and, after an extensive trial of both methods, the latter has appeared to be on the whole preferable to the former. The pain produced by the caustic is very considerable, but the relief of the symptoms is such, that I have known patients to be in the habit of making the application themselves, saying that "they knew that they should be better by the next morning." Besides, the issue is more easily dressed than where beans are used; and the inconvenience arising from the beans slipping out under the adhesive plaster, and from any accidental pressure of them against the sore surface is avoided.

The cases in which complete relief of the symptoms immediately follows the making the issue are not very numerous. In general, there is some degree of abatement on the caustic being applied, and in a few weeks afterwards, (provided that suppuration has not yet taken place) if the patient continues in a state of quietude, the pain entirely leaves him. Where the pain is exceedingly severe (as it sometimes is, so as to prevent sleep during successive nights,) it is very desirable that some method should be adopted, capable of affording

more speedy relief, than that which can usually be obtained from the application of the caustic. If there is reason to believe that the ulcerated surfaces are in a state of inflammation, in consequence of the joint having been too much exercised, bleeding may be had recourse to. A blister may be applied in the groin, and repeated if necessary. Blisters applied to the knee, though there is no actual disease in this joint, will often occasion considerable, or even entire, relief of the pain, which is referred to it from its sympathy with the affection of the hip. This is a very curious circumstance; but I have known it to happen in so many instances, that, however difficult it may be to explain it, I can entertain no doubt of the fact. An example of it is afforded by two boys at this time in St. George's Hospital. One of them, before his admission, complaining of pain in the knee; the practitioner under whose care he was, applied a blister to this joint. The pain immediately (according to the boy's account) left the knee, and attacked the hip. The other, while in the hospital, laboured under pain in the hip and knee also. A blister having been applied to the knee, the pain in it completely subsided, while that in the hip continued.

The objections which may be urged against applying the caustic to the skin in the groin, do not hold good with respect to a seton, in this situation. I was led to adopt this treatment some years ago,

partly from observing that the skin of the groin is nearer to the hip joint, than the skin elsewhere; partly from an expectation (though not a very confident one) that the making a seton over the trunk of the anterior crural nerve, might be particularly calculated to relieve the pain, referred to those parts, to which the branches of that nerve are distributed. The results of this practice more than realized whatever hopes I had entertained of its success. The following are extracted from notes, which were taken formerly, when I began making observations on this subject.

“ November, 1808. Mártha Atkinson, 15 years of age, laboured under symptoms of ulceration of the cartilages of the hip. She had pain in the hip and knee, but that in the hip was the most severe of the two. Her sufferings were such, that she could scarcely venture to make the slightest alteration in her position during the day, and she could procure scarcely any rest at night.

“ November 20. A seton was made in the groin.

“ November 22. The pain in the hip was almost completely relieved, and from this time she mended rapidly.”

“ John Selly, 11 years of age, was admitted into St. George's Hospital, on the 28th of December, 1808, with severe pain in the hip and knee, tender-

ness in the region of the hip, and enlargement of the glands in the groin.

“ December 30th, a seton was made in the groin. The pains in the hip and knee were almost entirely relieved within a few hours after the seton was introduced. The relief was permanent; and on the 24th of May following, he left the hospital as cured.”

“ Susan Dean, about 12 years of age, was admitted into St. George’s Hospital, in November, 1808, with very severe pains in the hip and knee, in consequence of disease in the former joint. A large abscess presented itself on the upper and outer part of the thigh.

“ On the 4th of December, a seton was made in the groin. The pains were relieved on the same afternoon. She had no return of pain while she continued in the hospital; but as her friends took her away in a few weeks after the seton was made, I had no opportunity of observing the termination of the case.”

“ James Craven, a young man, was admitted an out-patient of St. George’s Hospital, on the 15th of March, 1809, with the usual symptoms of ulceration of the cartilages of the hip. There was a large abscess on the outside of the thigh; and intense pain in the knee, preventing his rest at night.

“ March 16. A seton was made in the groin. Being unable to become an in-patient of the hospital, he walked home afterwards. Nevertheless the pain was completely relieved in a few hours; and he slept soundly at night, the pain not at all disturbing him.

“ After this the abscess burst, and collected again several times; and he became affected with hectic symptoms. I did not see the termination of this case, but I make no doubt of it having ended fatally.”

These were the results of this mode of practice in the first few cases in which it was adopted. In some cases indeed it has failed in producing the like good effects; but these cases have borne only a small proportion to those in which it has succeeded. On the whole I am led to conclude that where the pain is very severe, the seton in the groin is more likely to afford immediate relief, than the caustic issue; but that it is not equally efficacious in checking the progress of the disease, as in lessening the violence of its symptoms; and that the caustic issue can be better depended on for the production of a cure.

To make the seton in the groin, it is convenient to use a curved seton needle. In the greater number of instances the patient keeps the thigh bent considerably on the pelvis, and this position of the limb renders it difficult to employ a needle of the

usual form. The seton may be introduced obliquely on the anterior part of the joint, including from one inch and a half, to two inches of integuments. After some time the skin over it usually inflames and ulcerates, and the seton drops out; but this does not happen before it has produced all the benefit which may be expected from it.

Of the above observations on the ulceration of the cartilages of the hip, many are applicable to the disease in other joints. In all cases a state of the most perfect quietude is indispensable. Where the disease is in the lower extremity, the patient should be confined to the horizontal position; where it is in the upper, the arm should be supported in a sling. Where the knee or elbow is affected, we may employ the caustic issue, or the blister kept open with the savine cerate; but the former appears to be the most efficacious of the two. In the knee a narrow slough may be made by rubbing the skin with the *potassa fusa* on each side of the patella; and in the elbow the caustic may be applied in the same manner on the inside and on the outside of the joint. Where the disease has its seat in those joints, which are surrounded by numerous tendons, as the wrist or ankle, or the joints of the carpus or tarsus, it may be more prudent to employ the blister kept open with the savine cerate, lest injury should be done to the superficial tendons, by the application of the caustic. Where I have met with this disease in the shoulder,

it has yielded to the same remedy; but there is no reason why the caustic issue should not be employed here as well as in the hip or knee.

The treatment of the abscess which arises from this disease in a joint makes a question of very serious importance, but more so as it regards children than adults; since the former may, and do frequently recover even after extensive suppuration has taken place; whereas whatever has been the practice employed, I recollect no instance of a limb having been ultimately preserved under these circumstances in the grown up person*.

I have not found that the method of evacuating the matter, which has been recommended by Mr. Abernethy, in his treatise on the lumbar abscess, is attended with any particular advantage in a case of carious joint. Indeed this corresponds with what a little consideration might lead us to expect. If an abscess takes place as a primary affection, the disease being confined to the soft parts, there may be nothing to prevent the contraction of its cyst, and the gradual diminution of the quantity of pus evacuated at each puncture. But where an abscess occurs, in consequence of an ulcerated state of the articular cartilages, and bones, as the cause of the abscess exists equally after the puncture as before it, the suppuration will necessarily be kept up, and

* It is to be observed, that I speak here only of the abscess in a joint, which is the consequence of ulceration of the cartilage occurring as a primary disease.

the contraction of the cyst and the obliteration of its cavity will be prevented.

In some instances I have been led to believe that after the application of the caustic, the tumor formed by the abscess has diminished in size, as if from an absorption of a portion of its contents. I have however seen no instance of complete absorption having taken place, though I have made various attempts to produce so desirable an effect. Nauseating doses of ipecacuanha and emetic tartar were, in my experiments, of no service. Electricity was never useful; appearing rather to occasion a more rapid accumulation of matter. Knowing that pressure under certain circumstances, causes an increased action of the absorbent vessels, in two cases I applied strips of adhesive plaster round the limb, with the view of trying the effects of pressure on the contents of the abscess. The consequence was a speedy diminution of the external tumor; but I afterwards found, that this arose not from any absorption having taken place; but simply from the increased resistance on the surface, causing the abscess to occupy a larger space in the interior of the limb.

The early puncture of an abscess connected with a diseased joint is certainly not to be recommended. I have always observed that such an abscess has healed more readily, and that the opening of it, (whether by a natural process, or by the lancet,) has been attended with fewer ill conse-

quences, where the patient has been kept for some time in a state of quietude, and where the other methods of treatment formerly mentioned, have been previously resorted to, than where it has taken place immediately on the patient coming under the care of the surgeon. Nor is this difficult to explain: in the latter case, at the bottom of the abscess there is a carious or ulcerated surface of bone: in the former, it is highly probable, that the process of cure has already begun, so that where there was diseased bone before, there is now a granulating surface. At any rate it cannot be supposed that, where, in consequence of the neglect of the disease, the ulcerated bones, as well as the other parts, are in a state of inflammation, the abscess can be under such favourable circumstances for being opened, as where such inflammation has been previously allowed to subside, under rest, and the employment of proper remedies.

An abscess connected with any joint, but particularly one connected with the hip, does not form a regular cavity; but usually makes numerous and circuitous sinuses in the interstices of the muscles, tendons, and fasciæ, before it presents itself under the integuments. It is therefore less easy to evacuate its contents, than those of an ordinary lumbar abscess; and indeed it can seldom be completely emptied without handling and compressing the limb, in order to press the matter out of the sinuses in which it lodges. But this is often at-

tended with very ill consequences. Inflammation takes place of the cyst of the abscess, and pus is again very rapidly accumulated. Small blood-vessels give way on its inner surface, the bloody discharge of which, mixed with the newly secreted pus, goes into putrefaction, and exceedingly irritates the general system. I have seen cases where, after a great deal of pains having been taken to obtain the complete evacuation of the contents of the abscess, and the puncture having been healed, in a few days the tumor has become as large as ever, attended with pain in the limb, and a fever resembling typhus in its character, and threatening the life of the patient. A second puncture having been made, a quantity of putrid foetid pus, of a reddish brown colour, has escaped; the confinement of which had produced all the bad symptoms, which have been immediately relieved by its evacuation.

The practice which has appeared to me to be on the whole the best, is the following. An opening being made with an abscess lancet, the limb may be wrapped up in a flannel wrung out of hot water, and this fomentation may be continued as long as the matter continues to flow of itself. In general when a certain quantity has escaped, the discharge ceases, the orifice heals, and the puncture may then be repeated some time afterwards; but where the puncture has not become closed, I have not found any ill consequences to arise from its remaining open.

The occurrence of suppuration is a circumstance of importance for the surgeon to attend to in making his prognosis. The formation of even the smallest quantity of pus in the joint in cases of this disease, in the young person considerably diminishes, and in the adult almost precludes, the hope of ultimate recovery. On the other hand, where abscess has not begun to form, there is perhaps no disease, among those which come under the care of the surgeon, in which he can employ his art with a better prospect of success than this. It is to be observed, however, that the symptoms may be relieved while there are still some remains of the disease; or, at any rate, while there is still a disposition to relapse; and in order that the cure should be permanent, it is necessary that the treatment should be continued for some time after the patient is apparently recovered. A gentleman who had long laboured under ulceration of the cartilages of the hip, finding himself free from all uneasiness, allowed the issue to heal. This was attended with no immediate ill consequences, but in the course of two or three months, he began to experience the well known symptoms of his former complaint. A caustic issue was again made, and he was again relieved. The issue was kept open for twelve months and then healed. At the present time (two or three years since) he continues perfectly well. This, however, is only one of many cases which might be quoted in proof of the above observation,

III.

Perhaps the history of diseases can in no way be so well rendered intelligible as by the relation of particular cases. Those, of which I propose to give an account in the remaining part of this paper, will serve at any rate to illustrate some of the observations which I have now made, as well as the remarks contained in the last communication which I had the honour of presenting to this Society, on the subject of the diseases of the synovial membranes. Whoever will take the pains to compare these cases with each other, and to look for corresponding cases in practice, will, if I am not exceedingly mistaken, be convinced that the distinction of the different diseases of the joints is not a mere matter of curiosity, which may be interesting to the morbid anatomist; but that these diseases are different in their progress, that they produce different symptoms, by which they may be known from each other in the living person, and which indicate the employment of different remedies in different cases.

Cases of Inflammation of the Synovial Membrane.

The three following cases shew the principal circumstances which occur in this disorder, and the varieties to which it is subject. The first affords an instance of inflammation of the synovial mem-

brane in its simplest form, occasioning little else than an effusion of fluid into the articular cavity. In the second, coagulable lymph was effused in considerable quantity into the joint, but active treatment having been employed in the beginning of the disease, before the effused lymph had become organized, it was absorbed, and the knee regained its natural size and its natural degree of mobility.

The third case is an example of the effects of long continued and neglected inflammation of the synovial membrane. The joint was permanently swollen and stiff, in consequence of the synovial membrane having become thickened, and probably from its surfaces being encrusted by organized coagulable lymph : and, as always happens under these circumstances, the patient was liable to a recurrence of the disease from slight causes. This case also shews how long the synovial membrane may continue inflamed, and how frequently the inflammation may recur without affecting the bones or cartilages of the articulation.

CASE I.

John Adams, 47 years of age, on the 21st of August, 1811, was seized with a pain in his left knee, and in the course of a few hours he found the

joint to be swollen. This was accompanied by a slight attack of fever.

On the 28th of August he was admitted into St. George's Hospital. At this time the knee was extremely painful and tender, and much swollen : the swelling not having the form of the articulating ends of the bones, but being most prominent on the anterior and lower part of the thigh, underneath the lower portion of the extensor muscles. The fluctuation of fluid might be distinctly felt within the synovial membrane.

Eight ounces of blood were taken from the knee by cupping. The loss of blood was immediately followed by an abatement of the pain, tenderness, and swelling. On the 30th of August a blister was applied.

The cupping was repeated on the 9th and 18th of September, and on the 4th of October, and each time was followed by the application of a blister.

On the 10th of October the joint was free from all pain and tenderness; it was stiff, and still slightly swollen, but no fluid was perceptible, the swelling appearing to arise entirely from solid substance. He was directed to use a liniment twice in the day.

On the 18th of October there had been no re-

turn of inflammation ; and the stiffness and swelling were diminished. Friction was now employed by means of the hand with starch-powder every morning and evening : and in a few days afterwards it was directed (in addition to the friction) that hot water should be pumped on the joint so as to fall on it from a height of several feet, for half an hour every morning.

About the middle of November he was dismissed from the hospital ; the joint being now nearly as small and as moveable as before the inflammation had taken place.

CASE II.

Robert Stewart, 18 years of age, was admitted into St. George's Hospital on the 26th of January, 1814.

About seven weeks before his admission, he said that the right knee became swollen and painful, without any evident cause. The pain and swelling took place about the same time : the pain was severe, and attended with some degree of fever. About a fortnight before his admission, the joint was cupped, and the swelling and pain became much diminished, and the leg more moveable. The cupping had been repeated on the day pre-

vious to his coming to the Hospital, and again afforded him relief.

At the time of his being admitted into the Hospital, the knee was still much swollen ; the swelling extending up the anterior and lower part of the thigh under the extensor muscles. The swelling appeared to arise chiefly from solid substance effused within the articulation ; very little fluid being to be distinguished. There was but little pain or tenderness ; the joint admitted of a limited motion ; he said it was less stiff than it had been a short time before.

On the 27th of January, eight ounces of blood were taken from the knee by cupping, and afterwards a blister was applied.

On the 5th of February the blister was healed. The swelling was much diminished. The solid substance which had been effused was in great measure absorbed, so that the form of the articulating ends of the bones could be distinguished. The blister was repeated.

On the 18th of February the joint was scarcely larger than natural, but it was still stiff in a slight degree. The stiffness disappeared under the employment of friction with mercurial ointment and camphor : and on the 23d of February he was dismissed from the hospital as cured.

CASE III.

John Hannam, a stout middle-aged man, was admitted into St. George's Hospital, under Mr. Keate, on the 22d of May, 1811. He said, that six years ago he had wrenched his right knee, which in a few hours became stiff and swollen. In the course of a month the pain and swelling subsided, and he was able to return to his duty as a soldier in one of the regiments of Life-Guards, but from that period he experienced what he termed a weakness of the joint; and he had a return of pain and swelling, whenever he made any unusual exertion. A year and a half previous to his coming to the Hospital, he was ill of a fever. From this time the knee was more swollen and painful, and he continued in this state, sometimes better, sometimes worse, so that he was unable to do his duty, and he was in consequence discharged from his regiment.

At the time of his admission, the knee was swollen, partly from fluid in its cavity, partly from thickening of the soft parts. The swelling extended some way up the anterior part of the thigh, and was prominent on each side of the ligament of the patella. The joint was stiff; but admitted of incomplete flexion and extension. He complained of some degree of pain when at rest; but the pain was more severe whenever he attempted to ex-

ercise the limb. There was an enlarged lymphatic gland in the ham.

The knee was cupped several times, while the patient remained in the Hospital. Blisters and stimulating liniments were employed ; and about the end of September he left the hospital, better than when he was admitted ; but there was still pain whenever he made any unusual exertion, and the joint was stiff and swollen, though in a less degree than formerly. The swelling now appeared to arise altogether from solid substance, no fluid being perceptible.

Fifteen months afterwards I had an opportunity of seeing him again. There was very little alteration in the state of the knee. He said, that whenever he took more exercise than usual, or was exposed to cold, inflammation took place, and the swelling was increased ; but that by remaining for a short time in a state of quietude, those symptoms were always relieved.

Cases in which the synovial membrane had undergone a morbid alteration of structure.

The three following cases afford examples of a disease which I described in my late communications to this Society ; they will be found to illus-

trate the most remarkable circumstances in its history and symptoms, and to confirm fully the observations which I formerly made respecting it. In two of these cases, the disease could be traced to no evident cause ; in the third it appears to have originated in repeated attacks of inflammation. In the two first, the nature of the disease was so distinctly marked by the previous history and the present symptoms, that the nature of it was immediately recognised by the students of the hospital ; in the third case, the history being more obscure, the diagnosis was less easy. The first case, in which the patient was admitted into the hospital at a very early period, so as to admit the trial of different remedies, furnishes one of many examples which might be adduced to prove that this morbid affection is incapable of a cure, at least by any method which has been hitherto suggested.

CASE IV.

John Dillemore, 13 years of age, was admitted into St. George's Hospital in the summer of 1812, on account of a disease in one knee. At that time the joint was slightly swollen and stiff, so as to admit of only a very limited degree of motion. He was free from pain. The swelling was elastic, without any evident fluctuation of fluid. These symptoms had been coming on gradually about two

years previous to his admission. At this time he remained in the hospital for upwards of three months; and a great number of remedies, which it is unnecessary to enumerate, were employed without the smallest benefit.

On the 26th of January, 1814, he was re-admitted into the hospital. The affected knee was now about two inches and a half in circumference more than the other. The swelling was elastic; it extended up the anterior and lower part of the thigh, as in cases of inflamed synovial membrane, but its form was less regular, being more prominent and extending higher up on the outside than on the inside. The leg was kept in the half-bent position, and was perfectly immoveable on the thigh. He was subject to occasional attacks of violent pain. He said that the swelling had gradually increased from the period of his quitting the hospital in 1812, but that he had not been subject to very severe pain till about six weeks previous to his re-admission.

On the 31st of January the limb was amputated.

On examining the diseased joint, the synovial membrane was found converted into a pulpy substance of a light brown colour, with red spots arising from vessels ramifying in it, injected with their own blood, and intersected by very numerous membranous lines. On the outside of the joint,

the diseased membrane was in some parts nearly an inch in thickness. The membrane covering the cartilages in some parts was in a natural state ; in other parts it had undergone the same morbid change of structure as elsewhere. The cartilages were ulcerated in spots. There was about half an ounce of pus in the cavity of the joint ; and there were two or three abscesses in the substance of the synovial membrane, not communicating with the joint, containing about the same quantity of purulent matter.

CASE V.

William Hine, 23 years of age, was admitted into St. George's Hospital, on the 12th of December, 1814, on account of a complaint in one of his knees. He said, that in the summer of 1812, he first observed a slight degree of stiffness and swelling of the joint, unattended by pain. At first the swelling was confined to the inside, but it gradually extended itself over the whole circumference of the joint. The stiffness and swelling slowly, but uniformly increased : about the end of the year 1813, he first began to experience considerable pain.

At the time of his admission, the knee was considerably swollen ; the swelling was irregular, and most prominent on the inside ; it was soft and elas-

tic, without the fluctuation of fluid. He complained of constant, deep-seated, gnawing pain, which disturbed his sleep. He had a slight degree of hectic fever.

On the 16th of December, the limb was amputated. On dissecting the amputated joint, the synovial membrane was found to have undergone the same morbid alteration of structure as in the last case. The cartilages were slightly ulcerated in a few spots.

CASE VI.

James Gould, 65 years of age, was admitted into St. George's Hospital, in May, 1814.

One knee was swollen and stiff, admitting of scarcely any motion. The swelling was elastic. He complained of severe pain in the joint. Near the ligament of the patella was the orifice of a sinus, communicating with the articular cavity, and discharging a very small quantity of pus. No clear history could be procured of the disease in its earlier stages, but it appeared that he had been subject to repeated attacks of inflammation of the synovial membrane.

The limb was amputated on the 23rd of May. On dissection, the ligaments, bones, cartilages, and

that portion of the synovial membrane which is reflected over the cartilages, were found to be in a natural state; but the synovial membrane in other parts had undergone the same morbid alteration of structure as in the two preceding cases.

Cases of ulceration of the articular cartilages.

I shall next lay before the Society an account of two cases of ulceration of the cartilages, in which an opportunity occurred of examining the affected joints. They will be found to confirm the pathological observations respecting this disease, contained in one of my former papers; and they are of some importance to the practical surgeon, as they shew the connection between certain morbid appearances, and the symptoms, by which they are indicated. From one of these cases, we learn to how great an extent, ulceration of the articular cartilages may take place without the secretion of pus. The other affords an example of a fact which I have observed in some other instances. If suppuration has commenced, but only a small quantity of pus is hitherto collected in the joint, by means of rest and caustic issues, the pain and other symptoms may be for a time relieved; but the suppuration continues notwithstanding, and, as the pus becomes accumulated in larger quantity, the symptoms return in greater violence than before.

CASE VII.

John Catnack, 44 years of age, was admitted into St. George's Hospital, on the 29th of September, 1813, with pains in the lower limb of the right side, extending from the hip to the knee, and resembling the pains of rheumatism. He attributed these pains to his having caught cold about a month before his admission. He laboured also under a complaint of his bowels, of which he died on the 4th of December.

On dissection, no preternatural appearances were discovered, except in the right hip. The capsular ligament and synovial membrane were in a natural state. The cartilages covering the head of the femur, and lining the bottom of the acetabulum, were destroyed by ulceration for about one-half of their extent, and wherever the cartilage was destroyed an ulcerated surface of bone was exposed. The round ligament was readily torn, in consequence of ulceration having extended to it at the part where it was inserted into the acetabulum. The bones possessed their natural texture and hardness. There was no pus in the joint. It was observed that the ulcerated surface of the acetabulum, corresponded to that of the head of the femur, these surfaces being exactly in contact in the position in which the patient had remained since his admission into the hospital.

CASE VIII.*

Mary Anderson, 28 years of age, was admitted into St. George's Hospital, on the 6th of April, 1815.

At this time she complained of intense pain in the right knee, which was particularly severe at night, so as exceedingly to interrupt her rest. The pain was referred principally to the head of the tibia. There was a slight swelling of the joint, having the form of the articulating ends of the bones, and not giving to the hand the smallest sense of fluctuation. The leg admitted of being moved on the thigh, but all motion aggravated the pain.

No more particular account of the previous history of the case could be procured than the following; that she had laboured under pains of the right knee for nearly six years, which had been occasionally relieved; and that in the first instance the pain had been unattended by swelling.

Immediately on her admission, an issue was made with caustic on each side of the patella. On the 9th of April, the pain had very much abated. The issues were kept open by the occasional application

* This, as well as one of the following cases, has been added since the Paper was read to the Society.

of caustic; and the pains very soon left her, and the swelling diminished.

About the 8th of June she began to experience a return of the pains in the knee, and in the course of four or five days they were so severe as to keep her awake at night. There were convulsive startings of the limb, and the joint was swollen in a greater degree than formerly. The pains increased in violence, and her health began to suffer considerably. On the 3rd of July the limb was amputated.

On examining the knee, some lymph and serum were found effused into the cellular membrane external to it.

The cavity of the joint contained about half an ounce of thin purulent fluid. The cartilage covering the patella was, in some parts, in a natural state; in others, it had the fibrous structure*, which I have described in a former communication; and in others, it was completely destroyed by ulceration, so as to expose the surface of the bone. The cartilage covering the articulating extremity of the femur, presented the same variety of appearances. On the inside there was a spot of some extent, which, instead of cartilage, was covered by an organised substance, resembling the substance of adhesions,

* See Medico-Chirurgical Transactions, Vol. IV. p. 237.

but somewhat more dense in its structure, as if the cartilage had been formerly destroyed at this part, and coagulable lymph had been effused on the ulcerated surface of bone, which had afterwards become organized.

The cartilages of the tibia were ulcerated for a very small extent.

The synovial membrane in general was in a natural state. In some places it was slightly inflamed. On the outside of the joint, it was inflamed in a greater degree than elsewhere, and thickened and had begun to ulcerate, evidently in consequence of the abscess in the joint having begun to make its way to the external surface.

The bones possessed their natural texture and hardness.

The following are selected from many similar cases of which I have preserved notes, and in which the patients recovered under the treatment described in the former part of this communication. There seems to be no doubt that the disease was ulceration of the articular cartilages, since the symptoms exactly corresponded with those which have been observed in cases of this description, in which an opportunity occurred of examining the morbid appearances after death or after amputation.

CASE IX.

Mary Jenkins, 21 years of age, in May, 1809, received a blow on one of her knèes. Soon afterwards, she was seized with pain in the joint, which gradually became more severe. In September of the same year, she was admitted into St. George's Hospital, on account of this and some other complaints, which required medical treatment. At first she was under the care of Dr. Bancroft. On the 9th of November she came under the care of the surgeons. At this time the knee was somewhat swollen: the swelling having the form of the articulating ends of the bones, and appearing greater than it really was on account of the wasting of the muscles of the limb. No fluid was perceptible in the joint. She complained of violent pain, which she referred chiefly to the inside of the head of the tibia, and which was extremely aggravated by motion. There was no redness of the skin. She was emaciated, and laboured under a slight degree of hectic fever.

An issue was made with caustic on each side of the patella. The issues were kept open by means of peas: their surfaces being also rubbed with caustic every fourth day.

At the expiration of a fortnight, the pain was very much abated: she was able to give some mo-

tion to the joint without much uneasiness. The swelling had nearly disappeared.

In a little while the pain was completely relieved: however she did not quit the hospital until the September of the following year. At this time she was free from all bad symptoms, and had recovered the perfect use of the joint.

CASE X.

John Reade, 28 years of age, applied for relief as an out-patient at St. George's Hospital on the 4th of October, 1811.

He said that for two years preceding he had been subject to pains in the elbow, which were occasionally severe, but attended with little or no swelling. At the time of his coming to the hospital, the pain in the joint was very violent, particularly at night, when it continually roused him from his sleep. There was also pain in the shoulder and wrist, but trifling when compared to that in the elbow, and only occasional. The elbow was slightly swollen, the swelling having the form of the bones, and arising evidently not from fluid within the articulation, but from inflammation having extended to the cellular membrane external to it. The forearm was kept bent, and all attempts to move it

from this position caused a severe aggravation of the pain. There was some degree of symptomatic fever.

Eight ounces of blood were taken from the other arm, which occasioned some, but not considerable relief.

October 8, a caustic issue was made on each side of the joint.

October 11, he was free from the symptomatic fever; the pain in the shoulder and wrist had entirely left him; that in the elbow was much diminished.

October 16, the sloughs separated; the issues were kept open by the occasional application of caustic. He now made very little complaint of pain; and slept well at night. From this time he experienced very little uneasiness, he gradually recovered the use of the elbow, and in a few weeks, finding no inconvenience from the complaint, he ceased to attend at the hospital.

CASE XI.

Mary Taylor, 50 years of age, was admitted into St. George's Hospital on the 3d of December, 1809.

She said that in the preceding July, she had a violent wrench of the right shoulder, in consequence of her husband pulling her by the arm. Soon afterwards she was attacked by pain in this joint, which gradually became very severe. At the time of her admission into the hospital there was no alteration in the external appearance of the shoulder: there was not the smallest evident swelling; but she complained of constant and violent pain, which was much aggravated on every attempt to move the arm. The pain was most severe at night, so as very much to disturb her rest. She was unable to lie on the side on which the disease was situated.

The arm was supported by a sling, and a blister was applied to the shoulder, and kept open by means of savine cerate.

In less than a fortnight the symptoms were very much relieved. In the beginning of January, she had very little pain and slept well at night. About the middle of February, she was dismissed from the hospital, being free from all her former symptoms. She was directed to attend as an out-patient, that the blister might be kept open for some time longer. However she never made her appearance at the hospital again, probably in consequence of her finding no inconvenience from the complaint, and of her not being convinced of the

necessity of continuing the treatment after the symptoms were relieved.

CASE XII.

Anne White, 21 years of age, was admitted into St. George's Hospital on the 8th of January, 1814.

She said that three months before her admission she was seized with pain of the left knee. The pain was slight at first, but gradually increased in violence. In less than a month after the pain first attacked her the joint became slightly swollen. About a fortnight before her admission she was seized with a pain in her left elbow, unattended by swelling.

At the time of her applying at the hospital, the knee was swollen but only in a slight degree. The swelling had the form of the bones of the joint, evidently arising from an effusion into the cellular texture, and not from fluid within the synovial membrane.

During the day she had violent, but not constant, pain in the knee; the pain attacking her by fits lasting a few minutes. During the night

the pain was more constant, and very severe so as to disturb her rest exceedingly. The pain when most violent extended down the leg and up the thigh. The joint was capable of motion; but all motion aggravated the pain. There was great tenderness on the inside of the knee; the skin was somewhat redder than natural, but the redness was greater at one period than at another. She complained also of pain in the elbow, extending up the arm and down the fore-arm. This joint was not at all swollen. She had lost flesh; had a white tongue; a quick small pulse, and was occasionally flushed.

Immediately on her admission leeches were applied to the knee, which somewhat relieved the pain in this joint. On the 11th of January, a caustic issue was made on each side of the elbow, and on the 13th of January, issues were also made on each side of the knee.

On the 17th of January, the pain in the elbow was almost completely relieved; that in the knee was somewhat less.

The issues were kept open by the occasional application of caustic. The pain and swelling of the knee gradually subsided, and she recovered her health. The issues were not healed till the end of May, at which time the swelling of the

knee had subsided, and there was no pain either of the knee or elbow.

CASE XIII.

Elizabeth Knight, 26 years of age, was admitted into St. George's Hospital on the 22d of March, 1815.

For six weeks previous to her admission she had laboured under pain in the left knee unattended by swelling. At the time of her admission there was violent pain in the joint, which was worst during the night, so as to interrupt her sleep.

She was directed to remain in bed, and a caustic issue was made on each side of the patella.

On the 3d of April, the pain had very much abated ; and in a few days it entirely left her.

About the middle of April, she was seized with pain of the right knee, (also unattended by swelling), but she made no complaint of it until the 8th of May, when the pain had become more violent. A blister was applied to the right knee, and kept open with savine cerate. The pain was completely relieved in five or six days ; but the

blister was continued for a fortnight or three weeks afterwards.

On the 21st of June, having been for several weeks free from all uneasiness, she was discharged from the hospital.

In this and the preceding case more than one joint was affected at the same time, which I have shewn elsewhere to be no unfrequent occurrence*. The next case is one referred to in a former part of this paper, and in which I suppose the original affection to have been ulceration of the cartilages, and that inflammation of the synovial membrane supervened as a secondary disease. The circumstances of the case seem at least to be better explicable on this supposition, than on any other.

CASE XIV.

John Child, 33 years of age, in April 1814 was seized with a pain in one knee. The pain at first was slight, but gradually became very severe : it was referred principally to the head of the tibia on each side of the ligament of the patella. At

* See Pathological Researches respecting the diseases of joints, Medico-Chir. Trans. Vol. IV. In four cases out of ten, which are here recorded, the disease was proved by dissection to co-exist in two or more joints.

the end of five months the joint for the first time became swollen; and the swelling speedily attained a considerable size. He was now under the necessity of confining himself to his room. Five blisters were applied in succession, and the swelling and pain subsided: so that at the end of three weeks he returned to his usual occupations. In five or six days however the pain and the swelling returned, and he was in consequence admitted into St. George's Hospital on the 26th of October.

At this time he complained of pain in the joint, referred to the head of the tibia on each side of the ligament of the patella. The pain was excruciating, so as often to keep him awake a whole night. The knee was much swollen; the swelling arising from an effusion of fluid into its cavity, and having the same form as in the ordinary cases of inflammation of the synovial membrane.

October 29, a blister was applied, including the greater part of the circumference of the joint.

November 7, the swelling and pain were relieved. Another blister was applied, which was kept open with the savine cerate, until the end of the month. It was then healed, and a third blister was applied and kept open in the same manner. On the 21st of December he left the hospital of his own accord. The pain at this time

was very nearly, but not completely, relieved; the knee was swollen only in a very slight degree, and the trifling swelling, which remained, appeared to arise not from fluid within the articulation, but from thickening of the soft parts in consequence of their having been previously inflamed.