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Contributors

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CAUSES OF FAILURE
IN
EXCISION OF THE HIP.

BY

GEORGE COWELL, F.R.C.S.,

SENIOR SURGEON TO THE WESTMINSTER HOSPITAL AND THE VICTORIA HOSPITAL
FOR CHILDREN; LECTURER ON SURGERY AND OPHTHALMIC SURGERY
IN THE WESTMINSTER HOSPITAL MEDICAL SCHOOL;
SURGEON TO THE ROYAL WESTMINSTER
OPHTHALMIC HOSPITAL.

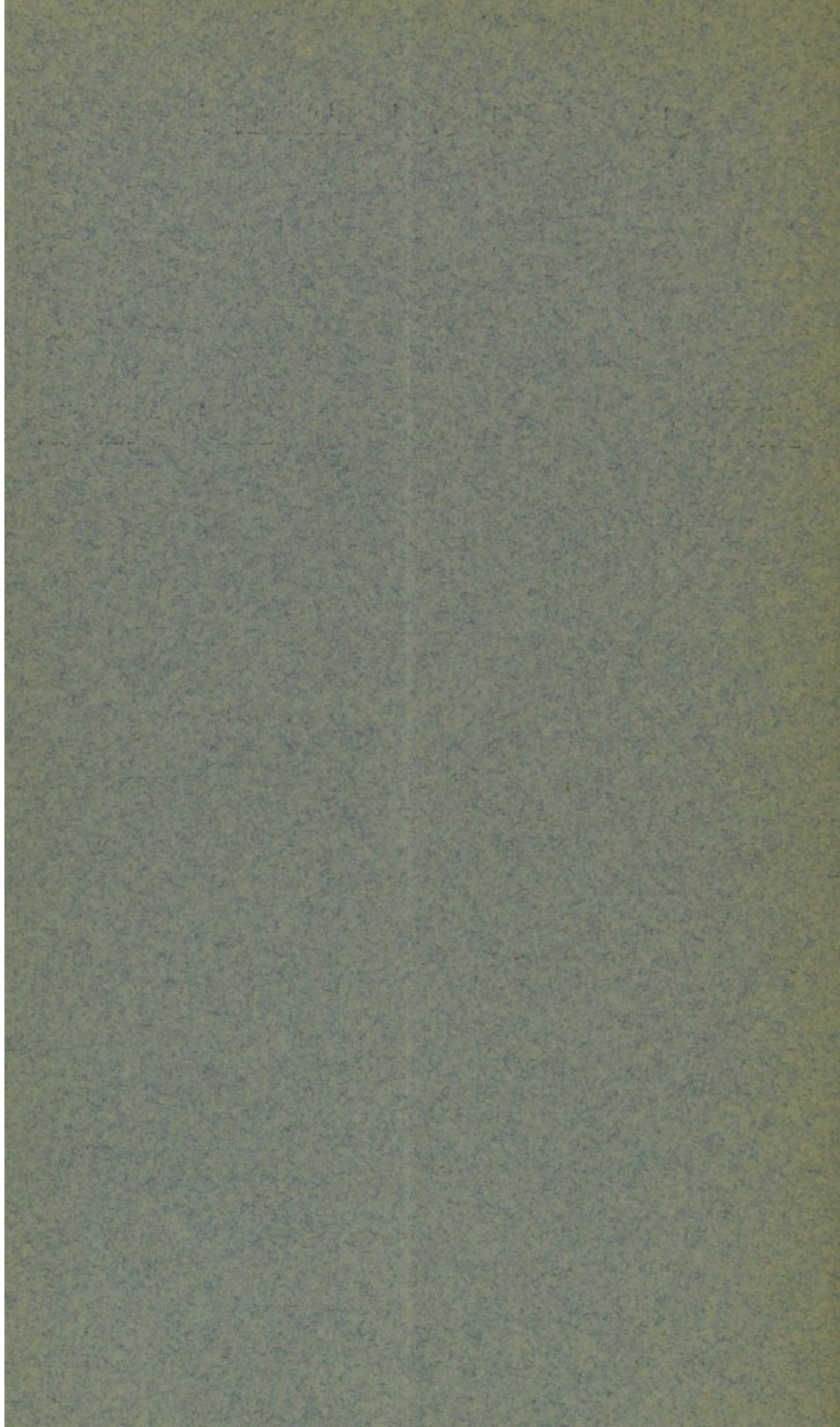
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CAUSES OF FAILURE IN EXCISION OF THE HIP.

By GEORGE COWELL.

GREAT advances have been made of late years in the successful treatment of joint disease. The pathology of the morbid changes that take place and the signs and symptoms produced in their early stages have been carefully studied, and the results of these inquiries have been an earlier recognition of the disease, and the discovery of the paramount importance of early treatment. Experience, too, has shown that by the adoption in this early stage of complete rest and the proper hygienic surroundings of an abundance of fresh air, an equable temperature and good nourishing but easily digested food, a complete cure can be assured. Amongst the more educated classes a surgeon is consulted early, the nature of the incipient disease is recognised, the proper treatment and care are adopted, and a cure, even in some cases without any resulting lameness, is obtained. Amongst this class of patients such an operation as excision is almost, if not quite, unknown.

Still in the presence of such favorable results as these we cannot afford to ignore the question of the excision of diseased joints. There is a large class of patients in whom disease is not recognised until it has made serious progress. It requires intelligence on the part of parents to recognise the early and not very pronounced presence of disease. In

our hospitals many cases of advanced joint disease, and especially of the hip-joint, come under treatment, in which the most careful adoption of the soundest principles of treatment fails to arrest the disease, and where sooner or later the question that the surgeon will have to decide is how best to save life and limb.

That life and limb may be most satisfactorily saved in advanced hip-joint disease by a timely excision is a fact of which I am firmly convinced. Three years ago I gave an analysis of sixty-five cases of resection of the hip-joint performed in the years 1869-82 inclusive, in a paper presented to the Surgical Section of the British Medical Association at their meeting at Worcester, an abstract of which was published in the 'British Medical Journal' of August 26th, 1882. From the experience that I had then gained in the wards of a general hospital and of a special hospital for children, together with that which I have acquired since, and especially from a careful consideration of the failures amongst my own cases and of those which other surgeons have acknowledged, on account of which many have been led to form a strong opinion against the usefulness of the operation, I have been led to place on record in this first volume of our 'Hospital Reports' what I believe to be the chief causes of these failures. That there are great difficulties and disappointments inseparable from this operation will be acknowledged by every surgeon who has had practical experience of it, and is proved by the considerable difference of opinion which exists with regard to it.

It is only in the third stage of hip disease when the joint has become disorganised, as shown by the presence of *grating* between the denuded head of the femur and the acetabulum, that the question of excision arises. These observations are throughout restricted to cases of disease. In many of these cases a most satisfactory cure by ankylosis may with proper treatment result. But grating is often accompanied by *pain* which extension or position fails to relieve, by *profuse suppuration* which free drainage does not check, or by *failure of health*. There are many cases in which we find co-existing two or even all three of these grave symptoms of the mischief which is going on in the articular structures.

But any one of them is sufficient when present with *grating* in the joint, and it is still more the case if more than one of these conditions exist, to show that the removal of the head of the femur should be carried out with no further loss of time. In cases of this description more lives are saved and more useful limbs are obtained by excision than by trusting to natural processes. It is essential, however, that the operation be not postponed until tubercular disease is induced by the continuance of mischief, until the patient is worn out either by the pain or the discharge, kept up it may be by the presence of *sequestra*, or until the bone mischief has extended so as to largely involve the femur or the bones of the ilium or both. Here, then, is one great cause of failure—the undue postponement of the operation. I am sure that no slight proportion of the cases of excision ending badly or with great deformity and permanent sinuses are those in which the proper time for the performance of the operation has been allowed to pass by, and that this is one way in which some amount of discredit has been brought upon the proceeding.

Another exceedingly important point in reference to the operation is the *age* of the patient. A rule which to my mind is most firmly established is that the younger the patient the better the result of the excision. The converse of this is also true that the older the patient the worse is the result; and it becomes a matter of great importance to determine whether there is an age at which the performance of excision of the hip-joint becomes unjustifiable. I have long discarded the operation in adults, and in my paper above alluded to I fixed the age above which it was inadmissible at eighteen. I am inclined now to put the age at sixteen or even fourteen. The substitute that we desire for the complex structure of the hip-joint is of course a fibrous ankylosis, that is, the formation and organisation of new material which shall not only attach the shaft of the femur to the acetabulum, but also to the tendons that have been detached from the removed head and trochanter. There is an extraordinary reparative power in young children. The younger the patient the more completely is the formation of new material carried out, the more organised and consolidated the new material will

become, the more it will follow the natural lines of development, and the greater will be the recovery of the command and usefulness of the limb. In my cases the completeness of the repair has been greatest where the operation has been performed between the ages of three and six. These children have all had most useful limbs, in fact, a most complete recovery, with little more than the cicatrix of the wound to show that the operation of excision had been performed. The lameness was exceedingly slight, the inequality of the length of the limbs being practically almost obliterated by a slight compensatory obliquity of the pelvis. This completeness of the recovery is not realised at later ages, and it is curious to see how graduated in point of completeness the results of this operation are, the proportionate shortening and other deformity increasing, and the muscular recovery and, for a few years at least, the subsequent growth of the limb diminishing with every year of age. On the other hand, amongst the older patients, fourteen to eighteen years of age, few of the limbs become in any way useful. There is always considerable shortening and muscular atrophy, and in those cases, where from the death of the patients some time afterwards from constitutional causes or prolonged suppuration, an examination has been possible, the process of repair has been found to be of the slightest, and often without any attempt at the formation of new material between the bones which is so essential if the limb is to become in any way capable of bearing the weight of the body.

The *form of operation* is of considerable importance. It used to be considered sufficient to remove the diseased head of the bone, a practice still adopted by some surgeons. The results of this proceeding have been very unsatisfactory, failing as it does in most cases to arrest the progress of the disease, and in but few cases succeeding in preventing considerable deformity. The unpopularity of excision of the hip with some surgeons is in no slight degree due to the adoption of this form of operation, and those who have tried this method and no other are no doubt quite right in discarding it, or in performing it only in the most favorable cases. My first excisions were performed on these lines and the results obtained in them convinced me that the operation

in its first conception was unsatisfactory, and that either some modification was necessary, or the operation must be abandoned. In its limited form there was, first, uncertainty in dealing with any disease that might be present in the acetabulum, and which often exceeded in amount the disease in the head of the bone, and, secondly, difficulty in keeping the bones sufficiently apart so as to prevent their being brought in contact by muscular contraction. The almost necessary consequence of the bones coming in contact was the lighting up into fresh activity of the morbid changes which in most cases already existed in the adjoining bone. Most surgeons recognised these drawbacks to the operation, and various modifications were suggested, the essence of which was the removal of the great trochanter with the head of the bone. Dr. Lewis A Sayre, of New York, enforced the necessity of this and proposed a subperiosteal method of performing it, a plan which I have adopted in a large number of my cases, and of which I can speak very highly. I had previously been in the habit of adopting a very similar proceeding in my younger patients, that of leaving a thin layer of cartilage of the great trochanter, so as to disturb as little as possible the insertion of the muscles into it, and I attribute in no small measure to this practice, the complete command of the limb which these young patients have recovered. Another essential part of the proceeding is the careful and complete removal of all diseased or necrosed portions of bone from the acetabulum, scraping away also all granulation tissue which may have been formed in and around the joint during the suppurative process, and freely washing out the wound with a weak antiseptic solution. The incision, which should be made immediately behind the great trochanter as being the best position for drainage, may be closed by two sutures at each end of it, leaving the central inch and a half open for a drainage tube which should reach to the acetabulum, and for the free escape of blood and serum. Perhaps the best dressings are two parallel absorbent pads one on each side of the wound, the whole being covered in by a large pad over the whole hip, secured, and especially at the edges, by some elastic bandage. The limb may be kept extended for a few days by a weight, taking care to

prevent eversion of the foot and rotation of the limb by means of sandbags. I generally, however, at once apply a Bryant's double splint. I have tried many forms of splint, and it is by far the best. It not only enables the surgeon to maintain and graduate the extension, but it is comfortable to the patient and facilitates the dressing of the wound and the maintenance of cleanliness. The child may be lifted out of bed with it or placed in any required position without pain or any relaxation of the extension.

There are three frequent sources of failure in these operations arising from neglect during the after treatment, and it is the main object of this paper to call attention to them. Without constant attention during the prolonged convalescence that must follow excision, and especially of the hip-joint, there are three things which are sure to occur.

1. The external wound contracts so as to interfere with the drainage from the deeper parts of the wound. If pus cannot freely escape, febrile disturbance with elevated temperature, burrowing of pus with sinuses, and fresh bone mischief may be expected. It is of the first importance to avoid this. Hence the surgeon must never relax his attention to the wound, and it is easy by means of the short piece of drainage-tube, and with the aid of the nozzle of the glass syringe to maintain a sufficient aperture.

2. The limb becomes everted. I am sure that this is a frequent cause of diminished usefulness of the limb after excision. As a rule surgeons are very careful of the position of the limb for the first two or three months after the operation, then, perhaps, the case is left to some one else, and the position of the foot is unobserved. Of course eversion takes place from the weight of the foot, and the most critical time for securing for the limb a good position is just when the patient has apparently made sufficient advance in the reparative process to permit of the removal of the splint. The weight of the foot has then, for the first time, perhaps, full sway over the limb, its rotated and everted position is unobserved, consolidation of the new material takes place and the limb becomes fixed in its bad position to the destruction for ever of any convenient power of walking.

3. The limb becomes gradually shortened by the contrac-

tion of the muscles inserted into the femur. In a large number of cases of excision of the hip extension is relaxed too soon. To avoid undue deformity and to obtain a thoroughly useful limb, it is absolutely essential that extension should be maintained until the consolidation of the new material is complete. The younger the patient the more rapidly repair takes place, and it therefore follows that the older the patient the longer must the extension be maintained. The difficulty of doing this and the constitutional risks that these patients run in the process are elements which assist in guiding the determination of the surgeon in fixing the age above which he will not perform this operation. But these are difficulties which he must face, and of which he should count the cost, in all cases where he may determine upon excision of the hip-joint, because he may be well assured that his case will be a failure or at best only a partial success, unless he is able to maintain extension for a lengthened period and until complete consolidation of the new substitute for a joint has taken place.

As plenty of fresh air, and sea air if possible, is highly efficacious for the cure of all joint cases so is it of great importance in the after treatment of hip excision. Some of our cases do not do well because they are kept in hospital too long, and it is very difficult to avoid it in face of the risks to which I have above alluded. In the summer months there need be little difficulty in getting these little patients out of doors. With Bryant's splint properly applied they may be lifted, two children side by side, into a kind of truck on wheels. At a later stage they may be still more easily moved with a Sayre's splint carefully applied to maintain extension. Some day, perhaps, a hospital may be built at the seaside or in the country for the special treatment of cases of hip disease. Incipient cases would profit equally with the more serious cases and both would probably get well much more rapidly than in town hospitals. But after all the great desideratum is to diminish the frequency of the necessity for operative interference, a possibility dependent upon a considerable rise of intelligence on the part of the parents of these poor children, which will prompt them to seek an early treatment of all cases of joint disease.

