Clinical Remarks

ON

EXCISION OF THE ELBOW-JOINT FOR THE RESULTS OF INJURY.

Delivered at the Queen's Hospital, Birmingham.

BY

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GENTLEMEN,—The change which I made twelve months ago in my duties as a teacher of clinical surgery—a change, namely, from an hour's formal clinical lecture to a couple of hours each week (independently, of course, of our systematic visits to the wards), of partly clinical lecture, partly clinical demonstration, partly clinical examination—has, among other advantages, this one: I can bring before you a larger number of surgical topics for practical illustration, and re-introduce, change, or dismiss them at will.

Joint-diseases have always occupied much of our attention, because of their frequency, their importance, and the rapid progress of our knowledge of their surgery in recent years. It is not more than true to say, that this branch of surgery, as exemplified in the writings of Bonnet, Richet, Bryant, Barwell, Sayre, Bauer, and many others, is as much in advance of the state in which Sir B. Brodie placed it, as Sir B. Brodie's views were in advance of those of his predecessors. Nor is this improvement found in pathology only; it is seen in treatment also, especially in the practice of excision of joints, the value of which, particularly in the upper extremity, where mobility is the great requisite, cannot be too highly estimated. I have so often drawn your attention to the several features of the progress of our knowledge of the pathology, diagnosis, and treatment of diseases of the joints, that I need not now advert to them; but pass directly to the consideration of cases which you have recently seen, of excision of the elbow for the results of injury.

As a general rule, the success which follows excision of the elbow and shoulders for injury is extremely satisfactory; not, however, so satisfactory as that which follows the operation for idiopathic or non-traumatic disease. In both classes of operations, the chief mischief arises from delay. I have known several cases of death from too protracted delay in the removal of disease of even the smaller joints of the upper extremity. A great danger of delay in the upper extremity (I need scarcely tell you that the principles which regulate the excision of joints in the upper and lower extremities are totally different) in osseous disease is the fatty degeneration of the muscles which rapidly ensues from the resulting disease of a joint. An useful hint in the practice of excision of the joints may be drawn from modern pathology—a muscular fibril which has once become fatty is never regenerated.

You all remember a case of excision of the shoulder of a young woman who was under my care in

Ward 3. The disease, though not of many months' duration, had constantly progressed, in spite of careful treatment before admission, until the deltoid was little more than a thin sheet of fat and fascia. It is true that when rid of the painful disease, she acquired considerable use in the shoulder, and with the preserved elbow and hand could follow a skilled occupation; but the deltoid could never again lift the humerus. This might have been effected by an earlier operation.

For simple disease, the results of excision are excellent. I will give you Mr. Bryant's opinion on this point. "At Guy's Hospital" (he remarks) "amputation for diseased elbow is so rare that in five years but one case has taken place, and in the same period eight excisions of the elbow have been performed with one death and with one subsequent amputation; in the remainder, a good arm was preserved." (*Diseases and Injuries of Joints*, p. 141.) Our experience at the Queen's Hospital is even more favourable than this.

For the results of an injury, delay is positively disastrous. A severe injury to the elbow-joint may require excision at any time—immediately, or in a few days, or weeks, or months—so rapid and destructive to all tissues is the inflammation which follows. It is the severity of the inflammation and the injury to adjacent structures—muscles, tendons, vessels, and nerves—which place the results of excision in traumatic cases below those of the operation in simple disease. Indeed, in many cases of disease, and in the slighter injuries, appropriate means short of operative interference will often arrest the mischief, and preserve the mobility of the affected joint.

In all diseases of the elbow-joint, whether of traumatic or idiopathic origin (as also in injuries which require immediate operative interference), remember this fundamental rule—however limited the injury or disease, if an operation be required at all, no part of the joint-structure must be removed without removing the ends of all the bones. Such a proceeding is as indefensible as, say, applying the taxis, or operating in strangulated hernia, or attempting to pass a catheter in retention of urine from spasmodic stricture, without securing the inestimable advantages of chloroform. To remove part of a joint, is to induce, with absolute certainty, ankylosis and its consequent inutilty; to remove the whole joint is to secure, in the great majority of cases, a thoroughly useful limb. I remember well, during a lengthened stay in Edinburgh a few years ago, the amusement which was produced in that distinguished surgical school on the publication of a case by a well known surgeon of a large London hospital. The case recorded the removal of the head of the radius only, simply because the head of the radius only was diseased.

The following case illustrates well the advantages of excision of the elbow for disease of traumatic origin. I shall make a few comments as I proceed.

W. C., aged 40. Nearly two years before admission (since which time he has been a complete invalid), a waggon wheel passed over the elbow. The skin was not broken. There was no fracture nor dislocation of the bones. The injury was immediately followed by intense synovitis, which was very speedily succeeded by inflammation of the bone-extremities. The elbow

was flexed at first from synovial distension. [Bonnet, of Lyons, induced the characteristic positions of the several joints in synovitis by forcibly injecting the joint cavities of the subject with water. I have had occasion to show you the value of his experiments, especially in hip-joint disease.] The character of the flexion was subsequently modified by that peculiar muscular contraction which accompanies osteitis, and which is absent in synovitis. Severe intermittent pain was present. Any attempt at movement of the joint was insupportable. For nearly two years the poor man passed from one practitioner to another—all of them being presumably of opinion that an operation was "uncalled for." The last medical practitioner whom he saw, very correctly surmised that surgical interference alone premised any benefit, and desired the man to place himself under my care at the Queen's Hospital. After careful examination, I pointed out to the man not only that excision was the best measure, but that there was really no alternative. I adopted Moreau's method. The patient was removed to bed, a light dressing having been applied and a figure of eight bandage. The arm was at first laid on a pillow, and in a few days when the patient left his bed (the sooner a patient gets up the better), was simply placed in a sling. Every kind of splint was carefully avoided, as splintage greatly favours the tendency to ankylosis. On the tenth day passive motion was commenced, and gradually increased in frequency and extent. After several weeks, by means of strenuous exertions, he succeeded in effecting slight movement without external assistance. In a few months, by devoting himself to seconding our efforts, he acquired every movement in his new elbow as completely as in the elbow of the sound extremity; indeed he could perform all the movements which the military surgeon requires of the recruit—movements, I may tell you, which many men with healthy joints are unable to perform.

The portions of bone which I removed are not altered in shape; and as the cancellous tissue is simply condensed, and the cartilages here and there only very gradually worn down to the bone, they might seem to have little the matter with them to those whose only ideas of bone-disease are those of advanced caries; ideas commonly derived from the "sensation" specimens which abound in museums; specimens which are, for the most part, discreditable memorials of a terribly antiquated surgery, and serve only as surgical scarecrows to warn students of the immeasurable evils of procrastination.

Give me your attention for a few moments to certain inferences which naturally flow from this case. Professor Syme introduced the operation of excision of the elbow into this country; and in all that appertains to this question, he is still our unapproached authority. What does he teach? This: that excision is the one remedy for the vast majority of diseases of the elbow; that ankylosis is itself a sufficient cause for excision (and ankylosis, bear in mind, is the certain result of severe inflammatory disease of the elbow—disease which quite possibly may leave the bones untouched); that every kind of splint should be avoided, as ankylosis is by far the greatest evil to be feared; and, lastly, that passive motion should be commenced at an early period—about the tenth day. The truth of these principles is aptly illustrated in the case I have narrated. The man now follows an occupation which requires mobility and strength, with as great efficiency as before his interregnum of two years.

I have already told you that the results of excision of the elbow for injury are inferior to those of the operation for disease. A careful consideration of the following case will show that the results are far from being so uniformly satisfactory as in the case of W. C.

A man in the neighbourhood of Dudley, received a severe injury to the elbow and arm in a colliery—the soft parts, including the ulnar nerve, being divided down to the bone at the back of the joint. In a short time, to use his own language (I quote these particulars from the report which was taken on his admission into the Queen's Hospital), "the arm was swelled to the size of his thigh." Six weeks afterwards, on his admission into the hospital, the elbow was immovable, and any attempt at movement gave rise to intolerable pain. Marked intermittent pain was also present. A sinus characteristic of bone-disease existed over the olecranon, and permitted a probe to come into contact with denuded bone. In short, there was no room for doubt that the joint was the seat of destructive inflammation implicating the bones; there was equally little room for doubt of the future of the case, unless surgical measures were adopted without delay. What the nature of the interference should be, could not admit of two opinions being held. Excision was the only remedy which gave any prospect whatever of success. The bones when removed gave signs of more advanced disease than was present in the case I have already brought before you, and could not possibly escape detection in any competent and careful examination. The bone-extremities were slightly enlarged, but not altered in shape. The sawn surfaces of the radius and ulna showed condensation of the cancellous tissue. In the olecranon process the osteitis had passed beyond the stage of sclerosis; the once cancellous tissue could be scooped out with the finger-nail and rubbed into a putty-like pulp. The cartilages, as in the case of W. C., were here and there gradually thinned down to the bone. The synovial membrane was completely destroyed. The man's habit of body was flabby, and his mental idiosyncrasy so strange, that in the after-treatment he not only did (as my dressers frequently remarked) the very reverse to what he was told to do, but undid what others had done for him. Add to these circumstances the severe injury to the adjacent structures at the time of the accident, and you will not be surprised to learn that the fibrous union was weak, and subsequently somewhat elongated; and that the muscular power over the elbow has not yet been regained. Much, however, may frequently be done in these cases by means of time, and (a suggestion of Mr. Barwell) by forcible friction of the bone-extremities, subcutaneous puncture of the uniting medium, and other measures.

I have frequently drawn your attention to the pathology of bone-disease; and there is no part of it more important than the changes which occur in the several stages of osteitis; and these have been greatly elucidated of late years by continental observers. Before I conclude these remarks, let me urge upon you the importance of an energetic and life-long study of pathology generally. I mean an attention so profound, that you will apply at first-hand to the writings of the numerous honest workers who are now revolutionising this most important branch of our knowledge; but whose views have not yet permeated the general current of surgical literature and teaching. Never forget that diagnosis is neither more nor less than the recognition of pathological states. As all treatment is founded on some

kind of pathology, the truer the pathology the more successful the treatment will be.

I might give you many illustrations of the everyday practical value of even advanced pathology. I will give you one or two. Those who have worked most closely at this subject in this country, and especially in Germany, have shown indisputably that phlebitis (in its common acceptation) has no existence; and yet surgeons are still too frequently afraid of putting ligatures on veins—structures which inflame with more difficulty than any others in the body. Another evil, a corollary to this, is of still greater magnitude. The numerous and too frequently fatal results of thrombosis and embolism, if unrecognised, are of course also unchecked, or are aggravated if treated as so-called phlebitis. Pyæmia, again, has quite recently been resolved into several distinct diseases; and, therefore, the treatment of the one supposed disease (which really never had any existence) should surely be relinquished. Take, again, the question of repair. It is still taught widely that there are many modes of the repair of wounds—immediate union; union by the first, by the second, by the third intentions; subcutaneous repair; repair of fractures. There is really but one simple method of repair in all localities, in all tissues, and in all circumstances. The sooner the views of Reichert, Donders, Virchow, and Kölliker (a late and reluctant convert to the new school), on the development of the tissues, are carried into the domain of surgical pathology, the sooner will the treatment of wounds be placed on a single, uniform, and philosophic basis.

At our next week's clinical meeting, I shall call your attention to a case of large strangulated inguinal hernia, who came in, a few days ago, with intense collapse (partial consciousness, pulse 48), hic-cough, and constant vomiting. I performed the single form of the extraperitoneal operation which I have devised (*Medical Times and Gazette*, 1864) for relieving the stricture by a small incision in the cutaneous structure away from the tumour, as in Mr. Gay's operation (large enough to admit the finger only), and leaving in all cases a hernial tunic unwounded between the subperitoneal fat and the knife. The peritoneum, subperitoneal fat, and fascia transversalis, in inguinal, umbilical, and ventral herniæ, are left undivided; and the peritoneum, subperitoneal fat, and femoral sheath, in femoral hernia. In two hours, the pulse rose from 48 to 72; and he has remained well, chiefly because the almost subcutaneous wound was not in itself dangerous. The wound in itself, in the operation of opening the sac, is extremely dangerous. I shall also bring overwhelming evidence to show the enormous saving of life which follows the extraperitoneal (pre-taxoid) operation, as contrasted with the rude, unanatomical, unnecessary (save in rare, exceptional, and recognised cases), and dangerous operation of opening the sac.

A COMMISSION is engaged in collecting subscriptions for the erection of a statue to Dupuytren, as well as of Laennec.

MEDICAL MAYORS. Mr. Garrington, a medical man of high standing in Portsmouth, is candidate for the office of Mayor of Portsmouth, vacant through the death of Mr. Cooper, who was also a medical man. Mr. Garrington has two lawyers for his opponents.

Remarks

ON

DR. BARCLAY ON MEDICAL ERRORS.

BY

THOMAS MAYO, F.R.C.P., F.R.S.

I WILL venture to suggest some remarks to Dr. Barclay, the subject of which, I am sure, has not escaped his attention in his work on *Medical Errors*, though I do not think he has given it quite sufficient weight.

Dr. Barclay affirms, that "few have attempted to apply the rules of inductive reasoning to medicine, though many of the collateral branches of knowledge which are embraced in the education of medical men, are cited by logical writers as instances of progress made in consequence of the employment of the methods of research which this department of philosophy has suggested." Dr. Barclay afterwards says, that he thinks he shall be able to show that the principles of medicine are based upon true and legitimate inductions. Now, the process of induction by the method of agreement, as applied to the simpler uniformities of cause and effect, *has been* cultivated with various skill by many medical writers; and Dr. Barclay adduces good examples of it from Dr. Jenner and Dr. Baly, not using, indeed, the expression for it which I borrow from Mr. Stewart Mill. But when Dr. Barclay proposes to show that the principles of medicine are largely based upon *true and legitimate induction*, by which I presume him to mean the method of difference of Mr. Stewart Mill, or its equivalent, *per exclusiones et rejectiones debitas*, of Bacon, I beg leave to observe that this latter induction has been abstained from, whether consciously or unconsciously, by medical writers, *because it is inappropriate*. We cannot isolate, and exclude, and subject to experiment the elements of disease, so as to arrive at that class of conclusions which are arrived at in science; *e.g.*, in the science of chemistry. Meanwhile, the induction by the method of agreement, inferior as it is to the more exhaustive process which constitutes true and legitimate induction, has been able to give us a high amount of certainty, as in those instances quoted by Dr. Barclay. But if medical writers venture to affirm more logical certainty in inductions than their subject matter allows, in place of progress in pathology and therapeutics, a reactive state of medical opinion will take its turn. We shall fall into a distrust of reasoning from having overrated it, and cease to antagonise disease for fear of antagonising it too much; a state of thought to which the conclusions of Sir John Forbes manifestly point.

I do not consider these cautions as vain. The early history of medicine is full of gratuitous assumptions, taking the form of *a priori* principles, and leading to proportionate error. Dr. Barclay will benefit medical reasoners, not by directing them to aim at inductions analogous to those of pure science, but by preserving them from such as he has commented on in Dr. Todd's practice.

One form of gratuitous assumption, I think, Dr. Barclay will allow me to suggest, as an important