are stated by some to do occasionally; it is certainly very exceptional). The first symptoms in paresis are chiefly cerebral; viz., mental excitement, great garrulity, noisy hilarity, bragging, early violence of behaviour, and very usually some exhibition of libidinous conduct; and on the subsidence of excitement, the mind is found to be weak, and the motor phenomena gradually make their appearance.

On the other hand, in ataxy, to describe the case most likely to be confounded with paresis, the commencement is in the spinal functions. There is first an attack of pain of some remote part—of pain likened to the pain of toothache—occurring most frequently in the lower extremities, and dating several years back, considered at the time perhaps to be rheumatic; this pain is worse towards evening, or when the patient is not mentally occupied; it may improve or disappear for a time and return. Then follows a slight degree of numbness of the part; the patient feels as if he trod on wool; occasionally “pins and needles” attack the part; in fact, those phenomena which we have all experienced after sitting in an awkward position, when one’s own leg has “gone to sleep.” There is, as most of us know, want of feeling, want of recognition of the member, especially as to its size, and even its ownership, then atrocious pain and pins and needles. In the disease, on the subsidence of the pain, the patients exhibit some awkwardness in gait; the ataxy or want of order on the movement is evident. These symptoms may extend over ten or twelve years with very little change. Except, perhaps, increasing awkwardness in gait, there is doubtless some numbness of the cutaneous surface in the course of the disease; the phenomena appear to spread upwards by involving the functions of the nerves higher up; the erection of the penis, and soon afterwards the sexual appetite are lost, and the disease ascends; the expulsive power of the bladder and rectum become impaired. All this occurs while little change takes place in the mental functions; but in other cases the mind appears imbecile, the memory is affected, and there is distinct alteration in behaviour and conduct; but there are no lofty ideas, no excessive excitement and garrulity, and in no case have I met with paroxysms of violence or libidinous ideas.

The differences may be better seen in a tabulated form.

<i>Paresis</i>	<i>Ataxy</i>
Runs its course in a few years.	Is much slower usually, and may last ten or even twenty years.
Commences with mental symptoms.	Commences with pain in a distal nerve.
Is attended with libidinous ideas.	Is attended with absence of sexual feeling.
The motor symptoms are secondary in the order of time.	The motor symptoms are the primary phenomena.
Is only rarely complicated with pelvic difficulties.	Pelvic symptoms are a prominent feature.
There often is great violence.	The mental phenomena are imbecility and impaired memory.

REMARKS ON DISLOCATIONS OF THE CLAVICLE, HUMERUS, AND ELBOW.*

By WILLIAM BROWN, M.R.C.S., Callington.

IN August, 1846, I published in the *Medical Gazette* a case of dislocation of the clavicle at the sternal end. I was surprised then to find that the accident had been considered to be very rare. My case is referred to in *Druitt's Vade-Mecum*. I have since had three other cases of the same dislocation, which would seem to show that the accident cannot be so rare as it has been deemed, or that I have been singularly fortunate in regard to it. In regard to dislocation of the clavicle at the acromial end, however, I do not recollect ever having had more than one distinct case. Most authorities merely say now that dislocation of the clavicle may take place at either end, without giving the relative frequency. All my three fresh cases of dislocation at the sternal end were similar to my first case—forwards. The first of the three cases occurred in July, 1858, in an old man, and was occasioned by his falling from a load of hay. The other two cases occurred within the last two years. One of them was a very young man, and he received his accident by falling from a cherry tree and pitching violently on his shoulder. The last of the cases was that of an elderly man, who received his injury by falling over the surface tramway of a mine, a height of about fifteen feet, and who sustained also, at the same time, a bad fracture of both bones of the left leg. In both these last cases considerable swelling and much tenderness occurred after the injuries.

The treatment adopted, in all the cases except the last, was just that which I adopt in fracture of the clavicle. After pressing back the projecting end of bone as completely as possible, I apply a long strip of *emplastrum roborans*, to which *pulvis opii* or *belladonna* has been added, spread on leather, and drawn tightly obliquely from below upwards over the injury, and on over the top of the shoulder. This firm and tightly adhering plaster undoubtedly helps to keep the previously displaced parts in apposition, and also conceals from the notice of the patient any deformity at its worst period, when heightened by any swelling which may exist. I then place a wedge-shaped pad in the axilla, and apply the figure-of-8 bandage; and finally take means to confine the elbow firmly to the side, and also to support it, and thereby to keep the shoulder from dropping.

My case of dislocation at the outer or acromial end occurred in December, 1871, in a powerful young mason, who, while tipsy, was hustled out over the doorstep of one of our inns on to the pavement. In this case the end of the clavicle not only overlapped the acromion, but was so much tilted up, causing stretching and raising of the soft parts, that there was nearly an interval of an inch between it and the top of the acromion. In this case the treatment was the same as in the others, and the result was very satisfactory.

In reference to dislocations of the humerus at the shoulder, I have had a large number of cases, from various causes, or modes of violence. In one case a man was in the shaft of a mine, where the materials were being hauled up, standing on the ladder and further securing himself by holding by one hand to one of the bars, while he was performing some labour with his other hand, when a piece of wood fell down the shaft from the surface, descending upon the deltoid muscle of the limb by which he was holding, and thereby forcing the head of the humerus into the axilla. In this case the deltoid became so paralysed, and wasted away to such an extent, that the man did not recover the power to lift his arm, or the serviceable use of his limb, for quite fifteen months. I consider my mode of reducing these dislocations to be, in a great measure, new; and I further consider it to be exceedingly neat and easy, as well as invariably successful in all recent cases. The best proof of this is, that I have never used chloroform or any other anæsthetic in any one of my cases. I place the patient (with the injured limb stripped of all clothing, of course) sideways on a strong chair, the sound side of the patient resting firmly against the back of the chair. I then place a jack-towel around the patient, as far up under the arm as convenient, and give the ends, either through the bars of the chair, or over the top of the back of it, into the hands of a strong attendant. I then fasten another towel around the injured limb just above the elbow, by the clove-hitch (or the simple reef-knot, which does quite as well), and deliver the ends of this towel to another attendant, who, when in action, stoops or crouches somewhat. I instruct the first attendant, when I am ready, to fix one of his knees, or both, against the chair, and to keep the patient firmly fixed against the back of the chair, while the other assistant makes steady extension downwards and outwards from the elbow. Or I may put two attendants to the towel fastened above the elbow, if necessary. I then place myself by the side of the attendant (but towards the back of the patient) who is to make extension at the elbow. When all other matters are ready, I place both my thumbs on the point of the shoulder, at the end of the acromion, and press the fingers of each hand, the one before and the other behind the arm, into the axilla under and inside the head of the humerus. I cannot bring it down and out from where it is lodged by the force of my own hands, as I bring it against the neck of the scapula, or the rim of the glenoid cavity; but almost immediately that I order the attendant, or attendants, having charge of the towel fastened above the elbow, to make steady extension downwards and outwards, I find the head of the bone to descend from its abnormal resting place, while I assist and guide it, and simultaneously with its escape from within the rim of the glenoid fossa it springs into the cavity with a very audible snap. When this is done, and I find that the reduction is complete, by gentle movement of the limb forwards and backwards, with one of my hands on the point of the shoulder, and the other at the elbow, and by tilting up the arm, etc., I place a wedge-shaped pad in the axilla, fastening it in the usual way over and under the other shoulder, confine the elbow closely to the side, put the hand in a sling, order an embrocation to be anointed over the injured shoulder, and enjoin this rest of the limb for a week or more. I think I may correctly say that all my cases of dislocation of the shoulder have been downwards into the axilla.

My plan has never failed me in any recent case, and has never required, as before stated, either anæsthetics, bleeding, or other relaxing means. I cannot conceive anything less agreeable to bystanders, or the patient, than to place the patient on his or her back on the floor, and to stick your heel, especially if the stocking should not be quite sound or clean, into his or her armpit, and then to begin pulling and

* Read before the Surgical Section at the Annual Meeting of the British Medical Association in London, August 1873.

wriggling the patient's arm, while the operator assumes a very formidable posture and movements, staring horribly and getting red in the face with his exertions, to say nothing of the danger of causing traumatic aneurism of the axillary artery and other minor evils.

I have seen failure in two old standing cases, where, in fact, however, no plan could have succeeded with safety. In one of these cases I assisted my friend, Mr. Kempthorne. In this case, we even made use of pulleys for extension from the elbow. But here we found, as did I in my own case also, that not only might rupture of the axillary artery, and of other parts, have taken place from persistence in the efforts for reduction, but it became quite evident, on making the necessary extension, that the glenoid cavity had become unfit to receive again the head of the humerus, by the adhesion of the soft parts to it, etc. I should add, that Mr. Kempthorne's case was that of an elderly miner who had received his injuries some months before, and had been under the care of a practitioner resident in another town; and that my case was that of an economical old lady who had been standing on a chair and fallen from it, seven weeks before she had applied to me, and who had hoped, although she had suffered terribly, that she had only sustained a bad sprain.

I have found injuries of the elbow to be exceedingly frequent (and to cause me much anxiety, and often embarrassment), especially in children of various ages, and more particularly in boys; while I have found fracture of the shaft of the humerus, or of the humerus in the upper third, to be rather scarce. Probably most country surgeons have had experience similar to my own as to the frequency of injuries at the elbow in young persons, from the fact that children in the country have almost unlimited opportunities for roaming about, for play, wrestling, climbing, running, riding donkeys, horses, etc.; and labourers' boys, and often farmers' sons, are put to work also very early, and too frequently to kinds of work, as with horses in carts or otherwise, for which they are unfitted. One of the greatest difficulties in these accidents is the rapidity with which swelling takes place, and the extent often to which it proceeds, before the surgeon can get the opportunity of examining and dealing with the case. Of these elbow injuries, a considerable number of cases in my practice have been instances of fracture of the humerus at the epiphysis, or of the separation of the epiphysis (comprising the condyles and articulating end) backwards. These cases, when uncomplicated, I have found easy to deal with, by bringing the epiphysis and forearm forward into their proper position, and applying angular splints, made of leather, mill-board, or by using Hides's angular felt splints of suitable size, and applying also, as I always do, a hollow straight wood or zinc splint behind, and a very short hollow wood splint or firm pad in front. I have had a few cases also where the point of the olecranon is broken off, and this has occasionally happened with adults. I have also had some cases where the inner condyle has been broken off. But, perhaps, the most numerous cases I have had of elbow injuries have been those of dislocation, simple or complicated with fracture, of the end of the humerus in front of the coronoid process of the ulna—or of the ulna backwards. In these cases, and especially in those of dislocation complicated with fracture, as I have before said, there is rapid and great swelling, which is a great obstacle every way to the diagnosis and the reduction. In such cases, more even than in simpler cases, you must handle and manipulate the injured parts sufficiently to be quite satisfied, if possible, as to the nature and amount of the injury, and then, on applying the necessary force for putting the displaced parts right, I have more than once seen a very serious looking livid spot in the bend or flexure of the joint. Of course, when you are satisfied that you have an ordinary case of dislocation only, the best plan by far for the reduction is that usually recommended, of placing your foot on the chair on which the patient sits, somewhat sideways (with an attendant fixing his body to the back of the chair), and placing your knee in the hollow of the elbow, one hand grasping the humerus and the other the forearm, and then making steady extension with the latter. I have sometimes effected the reduction by the hands alone, either by fixing the humerus by one hand, and making extension on the forearm with the other, or by causing an attendant to keep the humerus fixed, while I have used both my own hands on the forearm, sometimes guiding the end of the humerus by one thumb. Having completed the reduction of the dislocation, and ascertained that the patient's forearm can be satisfactorily flexed on the arm, I order a liniment, have the limb lightly bandaged, or wrapped up in old flannel or cotton-wool, and put in a sling, of course in the semiflexed or rectangular position; and I almost invariably, either at once or in a day or two, according to the degree of swelling, put on angular (rectangular) splints, but not tightly. This is not only desirable to prevent the risk of recurrence of the displacement, but I find that the swelling and inflammation subside much faster and much more completely in splints—in fact, in some cases it seems doubtful whether the patient would not get persistent or chronic

disease without them. In many of these cases some alterative or saline febrifuge medicines are required.

But I have had two very complicated, as well as severe, cases of injury to the elbow-joint, of dislocation complicated with fracture. Both of these cases occurred in boys, one about fifteen years old and the other eleven; in both, there was excessive swelling, when I reached the patients, from delay as well as from the severity of the injuries; in both, so far as one could ascertain, there seemed lateral dislocation, as well as that backwards—the ulna seemed greatly too much external to the humerus. This remained partially the case after the reduction of the backwards dislocation had been effected, viz., the inner condyle projected too much inwards. Was this owing to the condyle being partially split off, or to the outer condyle being partially split off, and one side of the end of the humerus thereby separated, to a certain extent, from the remainder of the end of the bone, and the outer part carrying the ulna with it? or was the coronoid process of the ulna broken off and displaced, or drawn away by the brachialis anticus muscle, and thereby the anterior guide of the ulna, in its perfect movements, lost—by which means also the inner parts of the end of the humerus, of the trochlea, etc., would become more or less uncovered, and, in extension especially, project too much forwards? It was impossible to be certain on these points at the time, from the immensity of the swelling, and it was absolutely necessary to desist from any further manipulation, from the threatening discoloration in the bend of the elbow, etc. In these two cases the process of reducing the swelling was very slow and difficult; in one of them, especially, the feverish state and constitutional disturbance of the patient were rather grave. In both cases it remained absolutely impossible to perform any further manipulations for about a month, and then it would have been too late in young subjects like them to adopt fresh operative proceedings, as no doubt fresh inflammation and fresh swelling, etc., would have been induced, with the probability of permanent joint-disease; and, moreover, although the elbows were large and looked somewhat deformed on the cessation of treatment, and were incapable of allowing either complete flexion or complete extension, yet I could not, and cannot now, see what more could have been done had the time been still opportune for proceedings; and this conclusion was confirmed in one of the cases by another surgeon of judgment and experience. I need hardly say that in both cases the patients have strong, useful, but certainly somewhat damaged, limbs.*

Before closing this part of my subject, I would wish to remark that I have had many cases of fracture of the forearm, either of one or both bones, in grown persons as well as in boys and girls of all ages. In the latter cases, however, I have often found the bones bent instead of being completely fractured, like a tough stick, which has been so far broken as to be useless as a support, while yet the ends are not completely separated. I have also had numerous cases of Colles' fracture, and always found them more or less unsatisfactory to deal with, until the new system was taught of the long pistol-shaped splint on the dorsal surface of the hand and forearm, and the short straight splint on the anterior or palmar surface of the forearm.

Before concluding this, I fear, long paper, I beg further indulgence to refer particularly to one very striking instance, different from those before referred to, of injury to the arm near the elbow. The case was that of a boy about nine years old. He was, on a Sunday evening, of course without permission to do so, riding a donkey, and a larger boy was riding a horse immediately behind. The big boy rode on to, and beat, the donkey; the donkey kicked out, the small boy was thrown over his head; the horse scrambled in upon the boy; the boy was brought home, and I was sent for. I found the epiphysis at the lower end of the left humerus completely separated from the shaft of the bone, and carried backwards, and the shaft sticking out through the flesh on the front of the arm, close to the outer edge of the commencing tendon of insertion of the biceps, to the extent of about an inch, and quite denuded of periosteum. The accident had occurred about three hours before I could reach the boy's home. I found it impossible to return the end of the shaft of the bone into its proper place, or very difficult to do so, even if I had thought it important to do it; but, from the bone being quite stripped of periosteum, and having been exposed to the air

* I have very recently examined both these cases. In both, the articulations of the radius are perfect, and, consequently, its movements in pronation and supination are unimpaired. In both, extension can be made almost completely; but the power of flexion is less perfect, although the forearm can be brought up considerably above the rectangular position. In the larger boy, the inner condyle was evidently split off, and so bruised and injured, moreover, that about a fortnight after the accident the integuments gave way, and it has since developed a distinct exostosis, or second condyle. In the smaller boy the coronoid process was evidently broken off, as before suggested, and the inner portion of the end of the humerus appears to be thickened and enlarged—hypertrophied; consequently, on extending the forearm, the inner part of the trochlea becomes prominent—too much exposed to view and touch.

for about three hours, I deemed it better surgery to saw off the projecting portion, which I did, and then brought the arm and forearm into proper relative position. I dressed the aperture with water-dressing, and applied angular splints, and made the limb look quite nice. But, on the following day symptoms came on which caused the necessity of redressing the wound, readjusting the splints, and applying cold wet cloths; and, by the third day, great irritative fever, great swelling, and discharge of bloody serosity had resulted. I had to take off all my neat and nice appliances, to apply cold lotions, etc. On the twelfth day, from some unknown cause, the discharge became alarming—it had the colour of blood, but yet was not perfect blood or perfect hæmorrhage—some blood-corpuscles in a flood of liquor sanguinis. Still, it was so great, that I thought it necessary to plug the aperture and channel with a pledget of lint wetted with turpentine, and to apply a cold wet compress. The boy looked fearfully ill, hot skin, with quick, weak, jerky pulse, quick breathing, very foul tongue, offensive breath, and that indescribable pallor which indicates more than loss of blood—a peculiar form of fever. After an interval of a day or two, however, the discharge had lessened and become more serous; after a further interval, the feverish symptoms and the swelling began to abate; the patient was able to take some food. When the swelling began fairly to go down, its disappearance was rapid; all discharge gradually ceased; and in the end the boy made a very good recovery, with a shapely and useful limb, and perfect joint. There is some deficiency in attempting complete flexion, but not in any other movement. I have examined this boy during the last few days. The shortened shaft of the bone made complete bony union with the end or epiphysis. There is a hollow, deep, indrawn cicatrix where the shaft of the bone projected, from the adherence of the soft parts to the bone, and the limb is less muscular and powerful than the other, but as useful in all other respects.

I would sum up my paper by saying that I have a salutary dread of injuries at the elbow, and perhaps a greater one of those at the hip, especially in old persons.

CASE OF DOUBLE VENTRAL HERNIA:

ONE STRANGULATED ON ADMISSION; THE SECOND BECOMING SO FIVE DAYS AFTER OPERATION ON FIRST. SECOND OPERATION: RECOVERY.*

By EDWARD WOAKES, M.D., Luton.

GEORGE G., aged 61, was admitted into the Luton Cottage Hospital April 11th, 1873, having a hernia on each side of the linea alba, about two inches above the umbilicus. They were distant from each other about one inch and a half. That on the right side was strangulated, and had been so twenty-four hours; he had experienced difficulty in reducing it for nearly a fortnight.

He stated that he had been the subject of dropsy during the past winter, causing great distension of the belly, and that, on the subsidence of this, two months prior to admission, the ruptures became apparent.

When admitted, he had stercoraceous vomiting, a quick irritable pulse, intense pain in the back, and the tumour of the right side, which was about the size of a pullet's egg, was very tense and painful; that on the left side was easily reducible.

April 11th. At 1 P.M. he was put under chloroform, and, the right tumour being still irreducible, an incision two inches in length was made through the integument, half of it extending upwards towards the ribs in order to expose as little as possible of the sac. The ring, which was thus readily reached, was very tense, and when divided nearly a quart of ascitic fluid escaped, the remains apparently of his dropsy. The bowel, as seen through the sac, was exceedingly dusky; it was easily reduced. The wound was closed with sutures. After the operation he vomited once. He was directed to be fed very sparingly on iced milk, and ten minims of liquor morphiæ were given every four hours. A turpentine stupe was applied to the abdomen.

He progressed without a bad symptom, the pulse gradually falling to 60 up to April 15th; when the bowels not having been relieved, though he complained of weight and fullness in the rectum, with the desire to evacuate without the power to do so, I ordered him an aperient of calomel and rhubarb. In the night this operated, and, contrary to instructions, he got up to the nightstool. In this effort, the hernia of the left side became strangulated.

April 16th. This morning, the left hernia was found tense and irreducible. Ice was applied, but without effect, and during the day

severe symptoms of peritonitis supervened. The pulse rose to 120. There was great pain, referred to the back, but no sickness. In the evening, there being no abatement in his condition and collapse threatening, it was deemed desirable to operate. At 8 P.M. chloroform was administered, and a similar operation to the previous one performed. On this occasion, however, great difficulty was experienced in reaching the ring, owing to the overlapping of the gut on the side of the incision. Very little was seen of the sac during the operation. Reduction was effected after somewhat free division of the ring. He was given a grain of calomel and a quarter of a grain of opium every three hours. Besides iced milk, some brandy was added.

April 17th. He passed a good night. Pulse, 104. There were much tympanitic distension and tenderness in the region of the transverse colon. He was ordered to continue the calomel and opium.

April 18th. He passed a restless night. Pulse, 112. He had had three loose motions. The tympanites was diminished; the tongue less foul. He was a good deal exhausted. The brandy was increased to three ounces. Later in the day he had frequent stools containing bloody fluid. He was ordered to take the morphia draught as on the former occasion. Instead of calomel and opium.

April 19th. Pulse, 104. He passed a quiet night. There was less purging, and he was altogether better. He was ordered to take beef-tea, milk, and arrowroot.

From this date he continued to improve, convalescence being apparently aided by a grain of quinine, with an eighth of a grain of morphia three times a day.

REMARKS.—Mr. Bryant, in his recent treatise on Surgery, lays down the rule that umbilical hernia always increases downwards, thus affording a guide to the situation of the incision when operating. Now, though this was the case in the right tumour of my patient, in the left the reverse condition presented itself, and added much to the difficulty of reaching the ring. It is worthy of note, therefore, that, though Bryant's law may be absolute in umbilical hernia, it does not always obtain in herniæ, which, though very near the umbilicus, do not take place actually at this spot.

In view of the extremely unfavourable effects of opening the sac in such herniæ, or of any undue interference with its contents, I was careful to see as little of the intestine as possible, and was fortunate in being able to reach the seat of constriction in both operations through an incision only long enough to allow the introduction of the finger.

In conclusion, I would testify to the good effect of opiates continuously administered, in checking the sequences of so serious a lesion of the intestine as happened in the above instance. I attribute the patient's recovery to the fact of his being kept in a state of narcotism for two or three days after the second operation. Under the influence of this drug, nature's bowel-splint, as it has been called, the intense congestion of the gut subsided, the surrounding peritonitis gradually disappeared, and the intestinal tube resumed its normal condition.

ON THE INOCULABILITY OF EPITHELIOMA.

By J. WICKHAM LEGG, M.D.,

Casualty Physician to St. Bartholomew's Hospital.

I WISH to place on record the results of a few experiments with the inoculation of epitheliomatous tumours, made about two years ago.

My observations were all made upon guinea-pigs and white rats. They differ from those which have hitherto been made, in the length of time which passed between the cutting out of the tumour and the inoculation. In the successful inoculation of malignant growths which have been recorded of late years by Follin (*Traité de Path. ext.*, 1, 303) and Goujon (*Journal de l'Anat. et de la Phys.*, 1867, p. 319), some hours must have gone by between the operation and the inoculation. It would thus seem probable that all life had left the tumour. It would then act as any dead mass would act, without any of the specific action supposed by some to belong to malignant tumours. In my own observations, I proceeded as follows. The animals were rendered insensible by the injection of three or four grains of chloral under the skin. The hair was then cut off some part of the skin, usually about the flank; and a cut about ten or twelve millimeters long was made through the skin into the subcutaneous connective tissue. By means of a probe, a space was made under the skin for a short distance, into which the inoculating matter was to be inserted. A suture of silk was then passed through both edges of the wound; but the thread was left quite free, not knotted. The animal was then ready for the inoculation. As soon as the tumour was loose, a thin slice, taken from where the tumour was most rapidly growing, was pushed under the skin, or in two cases into the peritoneal cavity; and the edges of the wound were at

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