CLINICAL LECTURES

ON

MOVABLE BODIES IN JOINTS.

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LECTURE II.

OCCASIONALLY, he who has a movable body in so important a joint as the knee will be led to discover its presence by no sense of pain, hardly of inconvenience, but either by accident or perhaps by some "queer feeling", which will cause him to examine the part with the hand. He then feels a lump, which probably will glide from his touch like a mouse—*Gelenkmaus*, as the Germans call it. The first sign, however, of so unwelcome a companion is frequently a sudden severe pain of an indescribable character; the bones seem about to start from their places; the "joint is loosened"; but the limb is rigid, and the muscles fixed in spasm. The patient may fall violently, even though in a dangerous position, or, at the least, he will seek support on the nearest object until he can sit. The pain is described as sickening; it is frequently accompanied by vomiting, and under its influence strong men have fainted. There is at first great dread of any movement, though after a time comes the sense that, if the knee could only be straightened out or bent, all would be well. After a while, perhaps, a resolute effort one way or the other will release the patient; in other cases, he can only remain in the position in which he was seized; he is put to bed, and, in an uncertain number of hours, sometimes as many as seventy or eighty, the fixity relaxes.

This sort of attack is produced by intrusion of the false body between the bones (femur and tibia). In its more severe forms, it may be taken as certainly indicative of a loose body, though it should be noted that a milder form of attack is sometimes caused by subluxation of a meniscus, usually the internal. Such events are followed, at all events at their first occurrence, by pretty severe synovitis, while their frequent recurrence produces a great degree of dread and timidity of locomotion, and a more or less constant dwelling of the mind upon the matter. The joint, too, becomes stiffer and the limb weaker. This condition will at last cause the sufferer to be most desirous of getting rid, even at some risk, of so troublesome a condition.

The surgeon who is called to a case in which these symptoms have occurred for the first time may have considerable difficulty in finding any loose body, because it may, even though relieved from between the bones, have glided into some synovial fold or other nook; also because there will very likely be such an amount of effusion as will help to conceal it. He may, indeed, have to visit his patient two or three times before he can find the offending cause. But, if the attacks have been pretty frequent, and the patient be aware that such a body is in the knee, he will have made it an object of some study; will have learnt its manners and habits; he will know where it usually resides, and by what movements he can bring it there; also, when it slips from this place, he will have learnt its other positions, or how to entice it back again; so that, unless a very unobservant person, he can be of great aid to his attendant. The surgeon should at first hunt for the "mouse" with the lightest possible touch, lest he scare it away, and his hand must be acutely alive to any abnormal projection; when such is found, it must not be directly pressed on, but surrounded at a little distance by as many fingers as may be wanted, which gradually approach each other till the body is closely imprisoned among them. A disengaged finger of each hand may then make the body course from one to the other, investigate its mobility, size, hardness, etc. When the surgeon has himself learnt something of its customs, he may go to work with less timidity. It may aid him to know that the more common places for finding these growths is on either femoral condyle; in my experience, the outer, in preference, just above the junction of the bones; but I have come across them in front of the femur in some cases, just over the patella; in others, considerably higher. I have also found them on the tibia, a little way inside the *ligamentum patellæ*.

I need only trouble you further with cases that occur in combination with hyarthrosis. It will occasionally happen that, on examining such a limb, the surgeon may find one or more such bodies floating loosely among the fluid, or rather more fixed. Of these, the patient

may or may not be aware. In this particular part of our subject—its semeiology—the matter is only of interest as a warning to look in such cases for more of these bodies when one has been found. In the next division, this matter will bring several points into consideration.

The treatment of a loose body was originally excision by direct opening of the joint; it was an extremely dangerous proceeding, causing B. Bell to say that he would rather amputate the thigh in the upper third than undertake it; and we must remember that such operation was in those days pretty generally fatal. In consequence of the dangers of this proceeding, many methods of fixing the bodies in some harmless part of the joint have been devised, the most usual of which are retentive bandages of various shapes, adhesive, non-adhesive, elastic and non-elastic, combined or not with blisters to the surface, keeping the substance fixed to a spot by passing a needle through it from without; passing a wire suture through in the same way; also the *serre-fine* similarly employed, that is, kept *in situ* for a few days, until it is thought adhesive inflammation has glued the body to the inner surface of the synovial membrane, or, what occurs quite as frequently, until violent inflammation necessitates their removal. All these plans are very delusive; the bandages, well applied, diminish the danger of the body getting between the bones; but, sooner or later, generally sooner, the accident recurs to the great disappointment of the patient. The various little operations also may seem for a time successful; but the body readily gets loose again. What else could we expect? Knowing that the movements to which it is subject have power enough to stretch and break its original pedicle, it should be plain to us that the same forces would have greater power over new and comparatively weak adhesions, even if such be really formed. The only means whereby efficacious relief can be given is by removal of the body by operation from the joint-cavity, and of these operations there are two: one by direct incision,* the other by subcutaneous opening of the capsule.

It is, I imagine, unnecessary here to describe at length the little contest between Mr. Syme and some who denied his claims; it really does appear that both he and M. Goyrand hit simultaneously on the method of trying to avoid the dangers which attended direct excision of the cartilage by performing the operation subcutaneously and in two steps or stages: 1. Dividing the capsule with a tenotome through a puncture of the skin; 2. After some days, when the wound of the synovial membrane may safely be considered healed, cutting through the skin and extracting the body from its new place. The surgeon, however, who has perfected this method, and made it really feasible, which before his efforts it certainly was not, is Mr. Square of Plymouth. He operates with a large-bladed tenotomy knife, and, before opening the capsule of the joint, he digs and cuts a passage and a burial-place in the periarticular tissue for the body to pass along and lie in; then he opens the synovial membrane rather freely, so that small size of opening as compared with bulk of substance may offer no hindrance to its passage; and then the body is squeezed and coaxed out of the joint-cavity into the prepared hollow.

In spite of these and other efforts, the operation still remains a doubtful one: one that no surgeon, however skilful, can undertake feeling such certainty of completing it as when operating for stone, strangulated hernia, tying a vessel, etc. In certain special cases, all the circumstances being most favourable, success may pretty confidently be predicated; yet even in such failure not unfrequently results. In other cases less advantageously circumstanced, failure becomes more likely than success. Failure means simply that, after opening the synovial membrane, the surgeon finds it impossible to make the body pass out of the cavity. This may either result from the pedicle remaining entire or from the body slipping away and becoming lost or incapable of being brought back, or, having been thus several times recovered, gliding away again so often, that at last both patient and surgeon with great disgust acknowledge defeat.

The direct method, as that by valvular or oblique opening is now called, is thus carried out; the body is carefully fixed, and an assistant shifts the skin over the deeper parts either upwards or to one side, as may be most convenient. The surgeon then cuts straight down on the body, which either springs out at once or may be removed with any convenient instrument. This method is scarcely liable to failure, unless a somewhat clumsy assistant let the body escape his grasp; but certain dangers attend, or perhaps I may say (for modern surgery has greatly modified these conditions) have attended this operation, and in certain hands it has been a very deadly, or at least a highly injurious proceeding.

* By this term, I do not mean cutting straight into the joint. Every surgeon at the present day would make the incision oblique or valvular—the term is used in contradistinction to the Syme-Goyrand method—the other by subcutaneous opening of the capsule.

Such dangers are those which attend wounds of joints; namely, traumatic synovitis with its sequelæ; viz., suppurative in the synovial membrane, ending probably in more or less loss of mobility, perhaps incomplete ankylosis, possibly in pyæmia and death.

When, however, the two operations are compared, it must be remembered that such results are not altogether incompatible with the subcutaneous method. To form a judgment as to the relative value of these procedures, it is desirable to have a wide overlook on results which have been hitherto attained. Up to a certain point, great facilities are offered me; for I am in a position to quote two sets of tables; the first that of M. Hippolyte Larrey, the second that of Dr. Benndorff.*

H. Larrey, 1860.

	DIRECT EXCISION.		SUBCUTANEOUS.	
	Number.	Per ct.	Number.	Per ct.
Success	98	74.8	19	48.7
Deaths	28	21.3	5	12.8
Failures	5	3.8	15	38.4
	131	99.9	39	99.9

Benndorff, 1867.

Rapid success.....	143	65.6	29	56.8
With severe complications..	32	14.6	5	9.8
Death	41	18.8	5	9.9
Failure.....	2	0.9	12	23.5
	218	99.9	51	100.0

In looking at these tables, one cannot but be struck with the smaller percentage of failures for the subcutaneous method in Benndorff's statistics, and more especially by the fact that, while in 1861 Larrey found fifteen failures among thirty-nine cases, Benndorff found only twelve in 1867 among fifty-one cases. Larrey gives in every case the name of the operator, and I have been able for the larger number to verify his data, and thus I cannot but regard his as the more reliable, since the divergence appears to arise, not from collection by Benndorff of a larger number of successes, but by absolute omission of failures.

If we consider the results of the subcutaneous method, we cannot but be struck with the small percentage of success; in the one table less than half the cases operated on; in the other, nearly two-thirds only are cured; while about one-eighth in the former, one-tenth in the latter die. The enormous proportion of failures indicates the unreliable nature of the operation, and shows how difficult it is to estimate whether the body is in all respects so circumstanced as to render this mode of excision feasible. To this subject I must briefly revert.

In the method by direct excision, a different set of facts comes to our notice. Here we have of success 75 per cent. in the one case, 80 per cent. in the other; but we have also a rather high mortality and a considerable quantity of such grave complications as have endangered life, and either caused considerable or entire immobility of the joint.

I have taken considerable pains to collect all the cases I could find recorded in hospital reports, journals, *Transactions* since 1859, etc., that are accessible to me. The cases are from almost every civilised country, and, with Larrey's table, will, I think, include nearly every published case since 1858.

Barwell; Eighty-eight Cases; 1860-75

	DIRECT.		SUBCUTANEOUS.	
	Number.	Per ct.	Number.	Per ct.
Success	44	91.6	29	72.5
Death	4	8.4	1	2.5
Failure	—	—	10	25.0
	48	100.0	40	100.0

This table gives in its small figures a very different ratio of success for both forms of excision; but I cannot say that I regard the results as very indicative of the results of operation. It is not in man to publish his failures, even though unsuccessful be due to no fault of his. And it is a little remarkable that I find recorded no single case of failure, unless it have been redeemed by a subsequent operation. This consideration will, of course, affect the subcutaneous rather than the direct method; a mere section of the joint under the skin without result will be more likely to escape notice than an operation followed by death or other grave results.

Moreover, it is evident that modern surgery has introduced greater

attention to cleanliness, greater care in exclusion of air, and other means, which render opening a synovial membrane a far less dangerous proceeding than formerly; while it may well be doubted whether, since Mr. Square began his improvements, anything remains to be done for the perfection of the subcutaneous mode; but that surgeon had four failures in fourteen operations.

In consideration of the latest of these improvements, and believing as I do that, by Lister's antiseptic method, the conditions of such operation are entirely changed, I have not troubled you, either in Larrey's table or my own, with the numerical instances of severe complications. Of this method, of its application and its influence on this particular operation, I will speak in my next lecture; and also will describe the special precautions which are necessary to render incisions into the knee-joint safe from the terrible dangers which have surrounded it.

PRACTICAL REMARKS ON CONGENITAL CATARACT.*

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[Concluded from page 280 of last number.]

I COME now to the most important and interesting question connected with these cases, namely, that of treatment. It has been chiefly with a view of bringing certain questions to a definite issue, that I am induced to offer these observations to our meeting. We will now proceed to the consideration of certain alternatives which present themselves to the mind as measures to be adopted. We may first divide the cases into those which are brought to us at a comparatively early period, as between the ages of six and ten; and those which come to us at or after the age of puberty. In children, we may adopt various alternatives. First, we may defer operative proceedings until the patient is able to decide the matter for him or herself. Secondly, we may operate on one eye, either by making an artificial pupil, or by removing the lens, by means of absorption or linear extraction; or we may operate on both eyes. The method of making the artificial pupil also admits some modifications. It will be evident, therefore, that the case is not quite so simple as might appear at the first glance, but requires and deserves some careful consideration.

We will take the different questions *seriatim*, though to some they may possibly seem superfluous and unduly analytical; since the practice of the great majority of oculists is to subject such cases to the process of absorption, or more frequently to linear extraction—at least such a proceeding comes from time to time before my notice. It is this practice which I think deserves to be carefully reconsidered, and in many cases, if not in all, materially modified.

We will now briefly consider the various alternatives that we have set forth. Firstly: Do we meet with cases in children in which we are justified in postponing any operative proceeding? If the vision be sufficiently good to allow the ordinary education to be carried on, and a fair amount of active exercise to be taken, I should prefer not to perform the major operation of absorbing or removing the lens, as it involves some absolute risk, and, if it succeed, requires the constant use of cataract glasses, which are a positive hindrance to a child; but if it be a case in which there is such a well defined, clear, broad margin as revealed by the use of atropine, that we have good reason to believe that a small artificial pupil would materially improve vision, I should advise it to be made, because it is an operation with a minimum amount of risk, and because glasses are not required. In the second place, supposing the condition of the young patient, as regards vision, is such as to require operation, what method shall we adopt? In all cases in which there is a clear margin representing one-third of the circumference of the lens, and where the vision is considerably improved by the use of atropine, I should strongly advise the performance of a small artificial pupil in preference to the removal of the lens. It has the advantage that it is far safer, is much more quickly and easily performed, that it enables the patient to dispense with the use of glasses, that it in no way enfeebles the eye, nor does it prevent a subsequent removal of the cataract if altered conditions should render this expe-

* Larrey gives his table in a discussion of the Parisian Société de Chirurgie. I quote from the *Gazette des Hôpitaux*, 1861, p. 267. Benndorff's statistics are in a *Thèse Inaugurale*, published at Leipzig in 1869. I have, in spite of many endeavours, been unable to obtain this work. I quote from Virchow's *Jahresbericht*. There is still another table which is mentioned in the Société de Chirurgie by M. de Chassaignac: it is ascribed by him to M. Berthensson of Odessa; but as it is somewhat singular in its results, I consider it hardly so reliable as to deserve quotation.

* Read before the Ophthalmic Section of the International Medical Congress in Brussels.