Such dangers are those which attend wounds of joints; namely, traumatic synovitis with its sequelæ; viz., suppuration 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. Berthenson 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.

dient. When the transparent margin is somewhat narrow, the effect of an artificial pupil will be more doubtful. Our best guide in such cases is carefully to test the sight under the full influence of atropine; and, if there be decided improvement, it may be confidently predicted that an artificial pupil will place the eye under still more favourable optical conditions. It is sometimes very difficult to arrive at definite results in young children, and delay may thus be justified.

Secondly: Supposing an artificial pupil to be determined upon, what method shall we follow? The best optical results will be obtained by the performance of an iridodectomy. It uncovers just sufficient space in the transparent part of the lens, and, at the same time, partially covers the semi-opaque portion. I have never met with any of the mischievous effects from this operation which have been assigned to it by others; but, as I can obtain nearly as favourable an optical result by another method, I have recently in most instances adopted it. I proceed as follows. I introduce a broad double-edged needle through the cornea near its margin, and just at the point which I intend should form the limit of my pupil. After withdrawing the needle, I introduce my small blunt hook, draw out the small portion of iris that intervenes between the edge of the pupil and the puncture in the cornea, and cut it off close; then, if gentle friction be made on the surface of the cornea with the spoon of the curette, the iris detaches itself from the corneal puncture, and floats in the chamber, having had little more than a slit made in it: indeed, it appears as if a small oval piece had been punched out of its pupillary edge. It seems to me that this operation is peculiarly well suited to accomplish its object. It forms a small limited pupil just in the right place, there is little or no reaction, and it is as safe as any operation on the eye can be.

We may consider, in the next place, those cases where the transparent margin is too narrow to admit of any material benefit from an artificial pupil, and yet where the vision is so far impaired as to give strong indications for an operation. Under these circumstances, we have no alternative but to remove the lens either by absorption or by linear extraction, a method of proceeding to which many high authorities are in the habit of having recourse in the majority of these cases, not infrequently on both eyes simultaneously, and, in such skilful hands, with a large average of success. Nevertheless, my own experience and my observation of others have convinced me that it is an operation involving some risk, and one that I undertake with some anxiety. Formerly, the method of operating for congenital cataract was by absorption, a process requiring several months for its completion; more recently this has been replaced, in some measure, by linear extraction, further modified by suction. Each of these methods presents certain advantages and certain risks. The method by gradual absorption is the most simple and easy of performance, and in the end gives, perhaps, the best result. The pupil being fully dilated, the capsule is carefully opened with a fine needle introduced through the cornea, so as to expose the lens substance to the solvent action of the aqueous humour; the pupil is kept dilated; and, at the end of six weeks or two months, if the opening in the capsule have closed, the same process may be repeated; and when all the lens matter is absorbed, the capsule, if any opaque part remain in the field of vision, must be torn through. Should all progress favourably, a clear, round, movable pupil remains, offering the best result that art can secure. The objection that has been urged against this operation is the long time occupied before the result is obtained. The risks of the operation are, firstly, a sudden swelling of the lens from too rapid absorption of the aqueous humour in its substance, giving rise to severe pain and to considerable hardness of the globe, a condition which may be best designated as acute traumatic glaucoma. Unless this symptom be speedily relieved, by performing iridectomy and allowing some of the lens matter to escape, the eye is in imminent danger of being sacrificed, and, even under the most favourable circumstances, only a partial success will be obtained; or, again, portions of lens matter may accumulate in the anterior chamber, or there may be a sudden displacement of one or more fragments, which, by pressing upon and irritating the iris, may give rise to pain and inflammation, and threaten the success of the operation. With a view to relieve this condition, an effort must be made to extract the offending fragments. These various *contretemps* have led some oculists to adopt a different method of procedure: a plan known as linear extraction is substituted. It consists of two stages. In the first place, the cataract and its anterior capsule are freely broken up, and they are allowed a few days to become macerated and softened by the action of the aqueous humour. In the second place, an opening is made in the cornea; and then, by means of a syringe suitably constructed, the soft matter is drawn or sucked out, so as, if possible, to remove every particle of the macerated lens. This operation has the advantage of rapidity, and in skilful hands often produces very excellent results; but it is by no means free from risk, and seldom leaves the pupil round

and free. On the whole, after having extensively tried both plans, and after having watched the results in the hands of others, I am disposed to revert to the old slow method, reserving linear extraction for those cases in which the fragments are setting up serious irritation, or for a few exceptional cases in which the saving of time may be a great object. As regards the treatment of the same group of cases in adults, similar methods must be adopted. At the same time, it should be borne in mind that the operation of absorbing the cataract is beset with more risks than in children; every possible care and precaution should, therefore, be taken.

In conclusion, I will state a few rules that I lay down for my own guidance in these cases, and that I venture to urge upon the attention of this meeting. In the first place, if the opacity be inconsiderable, and if the child be able to pursue his education, and compass the ordinary functions of life tolerably well, I do not urge operative interference, more especially where it would involve the removal of the lens; but if a decided advantage could be obtained by making such an artificial pupil as I have described, it is so absolutely free from risk that I should advise it.

In the second place, I make it an invariable rule only to operate on one eye at a time, and for this I have more than one reason: the stake is too great to hazard both eyes; then, a failure in one may assist us to pursue a safer, or, at any rate, a different method, if the patient or friends be willing to run the risk in the second eye; besides, a failure of both eyes is such a fearful wreck—a catastrophe I have witnessed more than once, and hope never to see again. It has, moreover, occurred to me on three or four occasions in which I have operated with success upon one eye in intelligent adults, and have removed the cataract, that, whilst they thankfully owned the great advantages gained by the operation, they have deliberately elected to retain the other eye in its defective state, affirming that it possessed certain qualities and advantages that were wanting in their renovated eye, and with which they were unwilling to part. As a final consideration, I may state that an eye from which the lens has been removed does not subsequently possess so good a life: it is more liable to undergo morbid changes, and to perish after a lapse of years. Supported by these various considerations, I reiterate my opinion that there is a strong case in favour of operating on one eye only. Of course, if one eye succeed, there can be no objection to the subsequent performance of an operation on the other, if the state of the vision render it expedient.

In the next place, I always perform the small iridectomy already described in preference to removing the lens wherever the extent of the transparent margin offers a fair prospect of improved vision, even though the result obtained be not quite equal to that which might accrue from removal of the lens; it is so much safer, and it further has the advantage, especially with the young, that cataract glasses are not required. I look upon the substitution of an artificial pupil in the treatment of these cases as a valuable march in the progress of our science. I have patients on whom this operation was performed years ago who are engaged in active professional duties, both in the church and in the law.

Lastly, in those instances where removal of the lens is indicated, I especially insist on the importance of only operating on one eye; then I prefer the slow method by absorption; and I urge the necessity of keeping a constant watch over the case until its termination, as acute symptoms may supervene at any moment, requiring immediate and active interference. I select the slow plan because I consider it safer, because the results as regards rotundity and mobility of the pupil are usually more complete, and because rapidity should scarcely be allowed to weigh in the choice of the method.

In dealing with these anxious and very responsible cases, whatever plan of procedure we select, and however great the skill and the experience we may bring to bear upon them, we shall inevitably meet with occasional failures. This should make us most generous in our judgment of those who encounter similar misfortunes; and, when such a sad result happens in our own practice, it is no little consolation to reflect that no element of rashness was permitted to sway our better judgment, but that every precaution has been taken which human skill and prudence could suggest.

THE annual dinner of the Royal Medical Society of Edinburgh took place on Tuesday, February 29th, and was attended by about sixty members and visitors. Dr. Turnbull, the senior President for the year, occupied the chair, and was supported by the Principal of the University, several of the professors, and other leading medical men. In proposing the continued success of the Society, the Chairman pointed out that, though a hundred and forty years old, the Society was in a very flourishing condition, and had added upwards of forty new members to its roll during the present session.