

*Lundy (C. J.)*

# DIABETIC CATARACT,

IRITIS, ETC.,

A CLINICAL LECTURE

DELIVERED AT THE

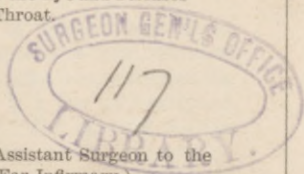
MICHIGAN COLLEGE OF MEDICINE

BY

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## Diabetic Cataract, Iritis, Etc.

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A Clinical Lecture Delivered at the Michigan College of Medicine by C. J. Lundy, M. D., Prof. of Clinical Diseases of the Eye, and of Diseases of the Ear and Throat.

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LADIES AND GENTLEMEN :—The first patient whom I present to you is Mrs. H., æt. 51, who comes to consult me from the southern part of the State. She has cataract in both eyes, and her case presents many points which should greatly interest you, not so much on account of the cataract, as on account of the condition of the system which has caused the cataract. By the term "cataract" is understood an opaque condition of the crystalline lens, which prevents, to a greater or lesser extent, the passage of rays of light to the fundus of the eye.

There are several forms of cataract, and based upon some condition peculiar to each form, we have a variety of names for the affection, although the chief element in all cases is a loss of transparency in the lens substance. The cataract may be hard or soft, and this depends on its consistency. Soft cataract is found in young people while hard cataract occurs in old people, on which account it is also termed senile cataract. The form of cataract which exists in our patient is essentially the same as the senile cataract, although it depends upon a condition of the system which in young people is a cause of soft cataract.

Cataract may be general or partial—general if the whole lens is involved, and partial if the opacity is

limited to a portion of the lens. In our patient it is general for the opacity involves more or less completely the whole lens. Cataract may be congenital or acquired, and the traumatic cataract belongs to the latter class. In the case before you it is acquired. Cataract may be either primary or secondary—primary, if it occurs independently of disease in other portions of the eye, and secondary if it depends on some intraocular disease. In the case under consideration, the cataract is primary, although it is secondary to the systemic disease. Then there is a large number of special forms of cataract, so to speak, such as nuclear, cortical, lamellar, polar, etc., etc., which I shall not take the time to describe, for this is not a lecture on cataract and besides they have no particular bearing upon the case under consideration.

The history of this case is as follows: Till nine years ago this patient enjoyed good health. About that time she was delivered of a living healthy child, but did not recover from the effects of labor as quickly as usual. She was thirsty all the time and drank large quantities of water. She does not remember whether she passed an unusual amount of urine, but I have no doubt she did. One year after that time she was voiding the enormous quantity of twenty-four quarts of urine daily, or about one quart every hour. The urine was found to contain sugar, and it has contained sugar constantly since that time.

During these eight years she has lost eighty pounds in weight, and as you see she is now very feeble. For the past couple of months her condition has been worse than usual, although she is now voiding only about eight or ten quarts of urine daily. Her appetite is still good although she frequently suffers from disturbances of the stomach, and complains of a peculiar "fluttering" sensation in that region, which is attended with a feeling of faintness. The heart's action is very feeble, and there is a

cardiac murmur which, in my opinion, is due to anæmia, and the pulse is irregular and intermitting. The skin is dry and harsh as is usual in such cases. Although I have determined the presence of glucose in the urine by means of the sulphate of copper and the liquor potassa test, no quantitative analysis has been made. I shall request Prof. Clark, whom I see ~~x~~ present, to make this quantitative analysis for you and explain to you its chemistry. [Prof. Clark, after making some remarks on diabetic urine, examined the specimen of the patient's urine and found its specific gravity to be 1040, and that it showed abundance of sugar according to Fehling's test. The quantitative analysis was not made during the lecture—Reporter.] Now what is this strange disease? It is diabetes mellitus, and the cataracts are the kind commonly called, in such cases, diabetic cataract. Her vision began to fail between three and four years ago, and for a year and a half she has been unable to read. At the present time vision is very poor, and she can scarcely count fingers at a distance of one foot.

As you examine her eyes you will observe that the back of the pupil is occupied by a grayish mass, and that the pupil does not present that black appearance which it does in the normal eye. The crystalline lens, which was once so transparent that almost all the rays of light falling upon it passed through unobstructed, has now become opaque and reflects back most of these rays, and hence you will see it as a grayish body occupying the back of the pupil. This opacity of the lens is cataractous, and is doubtless the result of disturbed nutrition within the lens, and in such cases sugar has been found not only in the urine but also in the lens substance as well as in every fluid and tissue of the body. To determine the presence of cataract it is advisable to examine the suspected eye by oblique or focal illumination, and also with the ophthalmoscope. Having made your diagnosis what will be your

prognosis in such cases as this? As regards the general course of the disease (diabetes) it cannot be favorable, and especially is this true of young subjects. As regards the eye and the prospects of the successful extraction of the cataract, much will depend upon the general health and condition of the patient. If his general health is still good, and if by a proper diet you can diminish the quantity of sugar and urine excreted, an extraction of cataract may be made with a certain degree of safety. Indeed, Wecker, of Paris, maintains that the diabetic condition need not be taken into consideration before extraction of cataract, and he cites two cases in support of his argument. But in the cases upon which Wecker operated there was no impairment of the general health, and one of them was in good health ten years after the operation, while the other asserted that he never felt better than at the time of the operation.

In the case of our patient, I do not deem it advisable to perform an operation for the extraction of cataract at the present time. There is an irritable condition of the eye and a hypersensitive condition of the retina, for notwithstanding that the cataracts obstruct most of the light she cannot look at a lamp, gas jet, or other bright light even for a moment without distress. However, I do not think there is any retinitis, for the field of vision is good in all directions for each eye as tested with the candle in the dark room. In making the examination with the ophthalmoscope and by means of oblique illumination, I caused much pain in the eyes, which pain extended to the cervical portion of the spine, and the patient was well nigh exhausted although the examination occupied but a few minutes.

At present her general health is poorer than it has been for a long time. Then she is extremely feeble, and is not in a fit condition to undergo an operation of any kind. Cataract operations in such subjects are liable to be followed by suppuration of the cor-

neal wound and this process may involve the whole cornea. We know that in diabetic patients there is a tendency to inflammatory troubles, and, in the case of our patient, this point is well worthy of consideration. My advice, then, would be to improve if possible the general condition and strength of the patient and check this enormous elimination of sugar from the system. If these can be accomplished I would first perform an iridectomy, that is, remove a portion of the iris, as is done for artificial pupil when made upwards, or as in the first step in cataract operation, and in the course of some weeks or months afterwards, I would, if all things were favorable, extract the opaque lens. By thus dividing the operation, as it were, you lessen the liability to inflammation, and enhance the probability of success,

#### ACUTE IRITIS.

Case 2. The next patient is Thomas L., *æt.* 25. One week ago, after exposure to cold from a draft of air blowing over him at night, his right eye became sensitive to light and the tears began to flow quite freely and vision was blurred. This photophobia and lachrymation were soon followed by pain which became so severe as to prevent sleep for four or five nights. He presented himself at the infirmary yesterday, where some of you saw him, when the case was diagnosed as acute plastic iritis. By iritis you will understand that there is an inflammation of the iris. On account of certain pathological differences, pathologists describe the acute idiopathic inflammations of the iris under three heads, *viz.*: serous iritis, which is rare; plastic iritis, which is most common; and purulent or parenchymatous iritis. Although it will not always be an easy matter to follow this classification clinically, yet it answers well enough. As you examine this patient you will observe a general congestion of the eye, and especially a zone of congested ciliary

vessels behind the corneo-scleral junction. By oblique illumination you will see that the iris is discolored, and the pupil is irregular and immovable, and that in the lower and inner quadrant of the pupil there is a deposit of plastic lymph, or what Alt would denominate as "fibrinous coagulum." He tells us that the vision of this inflamed eye is poor, and you will observe there is great intolerance of light, and that exposure to light causes a copious flow of tears. Although his pain is not so great as it was yesterday, yet it is tolerably severe. It is not confined to the eye, but extends over the brow and side of the head and down the side of the nose—in a word it follows the distribution of the first division of the fifth nerve. The patient is a robust, healthy, temperate man, and he never has had either syphilis or rheumatism. This is his first attack of inflammation of the eye. There can be but little doubt that the exposure to cold was the exciting cause of this attack of iritis. Notwithstanding that a four grain solution of sulphate of atropia has been used five or six times in his eye within twenty-four hours, there is scarcely any dilatation of the pupil. This is due in part to the inflamed condition of the iris, but more particularly to the results of the inflammation, *i. e.* to posterior synechia. By posterior synechia I mean an attachment of the iris to the capsule of the lens. This posterior synechia is one of the most frequent of the bad results of iritis, and one that should be prevented if possible. Its occurrence often leads to serious trouble and occasionally to loss of the eye. Now how shall we treat such cases? First, the eye must be placed at rest. Rest is important in the management of all inflamed organs, and to this the eye forms no exception. Rest can be secured by paralyzing the muscle of accommodation and by shading the eye from the light. The pupil should, if possible, be quickly dilated, and for this purpose you may use a four grain solution of sulphate of atropia or a two grain



solution of sulphate of duboisia. Of either of these solutions you may put a few drops in the eye every two or three hours. If the pupil dilates the blood vessels must of necessity contract, and the severity of the inflammation will be modified. The dilatation of the pupil also prevents adhesion of the iris to the capsule of the lens. Even if adhesion has taken place you can frequently break it up by the vigorous use of mydriatics, as will be illustrated in the next case. Aside from the therapeutic value, atropia and duboisia are valuable anodynes and will greatly relieve the pain in such cases. Two or three leeches may be applied to the temple with advantage in such cases, and their use is indicated if the pain is violent and the course of the inflammation is severe. The internal administration of mercury may be resorted to with advantage in all forms of iritis, but if the exciting cause is syphilis the mercurial should be given freely. Other constitutional taints should receive appropriate treatment. If the posterior synechia becomes complete the performance of an iridectomy would be indicated after the severity of the inflammation has subsided.

#### SIMPLE IRITIS WITH CORNEAL ULCER.

Case 3. The next patient is Herman W., æt 40, cabinet maker. You see he is a pale, thin, anæmic individual, quite unlike the last patient. Although not strong or robust he has enjoyed fair health and has never had syphilis and is not rheumatic. He had an ulcer on the cornea four years ago which has left a small white scar or leucoma. About six days ago he took cold while at work in the Pullman car shops. He was working beside an open window through which a stiff breeze was blowing and to which the affected eye was exposed. In the course of a day or two the eye became irritable and painful, there was much dread of light and the tears flowed profusely. When he came under observation two

days ago, a small point of infiltration was noticed in the center of the cornea, there was well marked ciliary injection, both of the deep and superficial vessels, the iris was somewhat discolored, the pupil was inactive, and there was an attachment of the iris to the lens capsule at the upper and inner quadrant of the pupil. Several of you saw him yesterday at the Michigan Free Eye and Ear Infirmary when the pupil was somewhat dilated but it still was adherent at a small point. The epithelial layer of the cornea had disappeared over the point of infiltration, and all the characteristics of a superficial ulcer of the cornea were present. To-day you will observe that the pupil is well dilated, that it is round and regular, and that I have succeeded in tearing loose the posterior synechia. The small corneal ulcer presents no observable change since yesterday. Iritis is sometimes secondary to corneal inflammations, but in this case I think the corneal trouble would not be likely to cause it, for the ulcer is small and superficial. Internal treatment has consisted of one-sixteenth of a grain of bichloride of mercury and one drachm of the compound tincture of cinchona thrice daily. Atropia sulphate has been used frequently, and in the course of a few days I shall dust a little calomel into the eye on account of the ulceration of the cornea, and in the mean time shall continue the atropia.

#### INTERSTITIAL KERATITIS WITH IRITIS.

Case 4. The next patient is J. W., æt. 8. She is a scrofulous child, and although her corneal affection would make me suspect inherited syphilis, yet I cannot detect evidence of it. As you see the right cornea presents a diffuse cloudiness, although this is less dense than it was. You also notice the rosy zone of congested ciliary vessels behind the corneal-scleral junction, the manner in which she shrinks from the light and the copious flow of tears. There is also an adhesion of the iris to the capsule of the

lens, which I think can be easily broken up for it is limited in extent, and the corneal trouble is getting better. I think the corneal inflammation was undoubtedly the exciting cause of iritis in this case. The treatment should consist in the use of atropia to prevent complete posterior synechia and to tear loose synechia already formed, if any exist; the administration of cod liver oil and tonics, and the use either of calomel or the ointment the yellow oxide of mercury (hydrarg. oxid. subflavæ gr. vj, vaseline  $\frac{3}{4}$  ss) in the eye once daily. If iodide of potassium is administered internally it were better not to use mercurials in the eye. At best these cases are slow and tedious.

#### STRABISMUS CONVERGENS.

Case 5. The patient is master Charles M., æt. 8, whom I operated upon before you some two weeks ago. I bring him before you to show you the perfect result of the operations. You remember that the squint was of high degree, and that it was necessary to sever the internal rectus of each eye. Now that the squint is fully corrected, he should be examined for spectacles and the hypermetropia, which was the prime cause of this squint, should be corrected by suitable convex glasses.

Case 6. This little patient you have seen before. You remember that I severed the internal rectus of the right eye for convergent squint, and that I told you she would undoubtedly need an operation on the other eye. To-day the right eye is straight, but the other is not so; and in order to enable the visual axes to assume a correct position and thus avoid double images, the internal rectus of the left eye must be snipped.

