

Prince, (A. E.)

The extraction of Cataract.





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# THE EXTRACTION OF CATARACT,

AS INFLUENCED BY

## MYCOLOGICAL DEVELOPMENT.

BY A. E. PRINCE, M. D. JACKSONVILLE, ILL.

While in general surgery the results of modern antiseptic treatment are brilliant beyond those in any former period of historic medicine, no single capital operation has been placed on a base of greater certainty of success than that of *cataract extraction*.

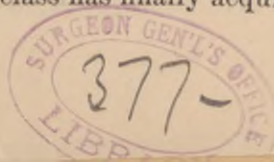
The origination of the operation of extraction by Jaque Daviel in 1750, though in a comparatively crude state, and attended by a large percentage of suppurations, was a great advance over the operation of reclinatio practiced before that time. Modifications of the flap operation and improvement in the instruments used, still further increased the ratio of success to 90 per cent.

No further advance was made until the immortal Graefe introduced the method of extraction through a small peripheral incision accompanied by an iridectomy. By this means the loss through suppuration was reduced to 5 per cent. Graefe died before the era of applied anteseptics, and until its advent into surgery no further improvement was made. Prompted by the still frequent occurrence of suppuration, numerous operators have varied the location of the line of corneal incision, but until it was shown by Lister and proven by Koch that suppuration was invariably due to the admission of pyogenic organism into the wound area, no further advance was attained.

The leading oculists of every civilized nation promptly anticipated the salutary influence of the introduction of this new idea into surgery, and attempted at once, the application of anticeptic methods to ophthalmic practice.

Antiseptics applied to the operation as well as the preparation and subsequent management enabled Horner to realize the extreme of 98 per cent without suppuration.

At first there was the respectable minority of so-called conservatives who laughed at the "bug-theory" but with the accumulation of statistics showing the increased ratio of successful results, the unimpeachable evidence of Koch, based upon inoculation and dry slide pure cultivation, and the unbiased and invaluable labors of Knapp, establishing the practice on a physiological base, by experiments made upon live rabbits, this class has finally acquiesced in



the universal acknowledgement, that all septic or suppurating states are the result of mycologic life.

Under the sway of this law many things have become unsettled. Less importance is attached to the location of the incision, less emphasis is placed upon the confinement of the patient, and the bandaging of the eye. Even the time honored iridectomy which has been almost unmolested since the days of Graefe, bids fair to be abandoned.

It would afford me pleasure to communicate my observation on the methods pursued by many able oculists in England, France, Germany and Switzerland, but the limit of this paper will only furnish the following detail of operation, in which attempt has been made to combine the points of various operators, which conduce to the certainty of success.

**OPERATION—*Operating Room.*** Too little attention is paid to the question of an operating room in which the air is as nearly as possible free from germs. Prof. Michell of Wuertzburg, whose success approaches 100 per cent, lays great stress upon this point. He has, his room, which is especially constructed, sprayed before the time of operation, with carbolic acid, so that any floating particles, may be caused to settle, thus avoiding the danger of there being carried into the wound by natural or artificial currents of air or spray. In this connection I may be pardoned in this particular reference to the success of my father Dr. David Prince, who performs his major operations under a current of air which enters the room after having been sifted through cotton to remove every germ, moistened by steam to the point of saturation, and heated by gas to a temperature of 110 deg. Thus rendered absolutely free from germs, and it is innocuous and unirritating to the peritoncem. At frequent intervals its purity is tested by the exposure of sterilized broth for fifteen minutes, at the point of its admission into the room immediately over the operating table. Should any of the tubes fail to remain seril, the cotton through which it is sifted is changed. To this among other precautions is attributed the almost universal absence of suppuration following the ophthalmic operations as well as those of a general nature performed in this room.

The *operator* should cleanse his hands and nostrils preparatory to an operation, and guard his breath from blowing directly into the patient's face.

*Instruments* should be sterilized in 3 to 5 per cent. carbolic acid previous to operation, and used, dripping from a 2

per cent. solution. The cutting instruments are placed in alcohol after being thoroughly cleansed and allowed to remain until the moment of their use. This method was originally advocated by Prof. Rothmund of Munich.

The *patient* should have a preliminary bath, and immediately before the operation the face and hair are to be washed with sublimate 1:5000—which is also used to cleanse the ciliary borders of the everted tarsi, as well as to irrigate the conjunctiva throughout its extent. Attention should be given to the roots of the lashes, about which organisms are prone to lurk. If dachryocystic inflammation exist, the tract receives preliminary and immediate antiseptic irrigation. Solution of atropine and cocain in sublimate 1:5000, are especially prepared from boiled distilled water, and a separate system of applications is assigned to each patient.

*Cocainization* is commenced fifteen minutes before the operation and a 4 per cent. solution instilled every three minutes thereafter, this length of time being allowed to effect the anaesthesia of the iris, the incision of which is sometimes painful when the cocain is applied for a shorter period.

The *incision* is made upward and placed in the line of the sclero corneal junction.

*Iridectomy*.—The preference is still given to a small iridectomy, which will prevent the danger of incarceration in case of subsequent escape of aqueous; the fate of too many modern attempts to attain the aesthetic circular pupil at the risk of subsequent sympathetic irritation.

The *Capsulotomy* is made central by means of a cystotome thus avoiding the complications attending the opening of the capsule with the knife while making the section, as practiced by Galezowski.

The *Extraction* is affected by placing the curette on the oiled cutaneous surface of the lower lid, the speculum having been removed and the upper lid being elevated with a fenestrated spoon, with which, if required the upper lip of the incision may be depressed. Slight pressure from below upward causes the lense to enter the incision and escape. The pressure of the spoon on the lower lid is retained and by gentle manipulation, any remaining cortical substance is removed. The irrigation of the anterior chamber is seldom found necessary except in traumatic or unripe cataracts, in which case it is done as recommended by DeWecker, with a 1 per cent. solution of boric acid at 100 deg. F.

The eye is again irrigated with sublimate warmed to the body temperature, and a portion of ointment of veseleine and hydrarg. bichloride 1:2000 inserted under the lids. Some of the same is applied outside and covered with a small portion of cotton to fill the depressions of the lids. Over this is placed a strip of adhesive plaster, reaching from temple to temple. This dressing in place of the old time bandage permits the patient to lie on either side, after the first day, which liberty would be unsafe should the bandage be applied, because of the danger of its being drawn too tightly over the eye by the motion of the head on the pillow.

*Inspection* of the eye at an earlier period than forty-eight hours is liable to cause an escape of the aqueous, retard the healing, and increase the danger of anterior senecchia. In practice the bandage is removed, once or twice a day and a drop of atropia sulph, 1 per cent. inserted at the inner canthi without opening the lids, and the dressing reapplied, opening the eye for the first time at the end of four days.

The *Confinement* of former times is discontinued. Until the discovery of the true origin of pus and putrefaction the phlegmonous inflammation and corneal suppuration, entailing total loss of sight, were attributed to some vice or indiscretion. The cause was sought for in the blood, and preliminary systematic dieting and medication were thought necessary. Failing in this the source of trouble was thought to be mechanical, the evil consequences, being presumed to follow the motion of the eye, or head, or body of the patient, or result from some injury or accident during sleep. Influenced by this conception the patient was placed in bed, on his back, and all motion interdicted for four days, during which he suffered physical pain or vital derangement from the confinement. The practice was not uncommon of securing the hands, or elbow cuffs were fastened on the arms with tapes to prevent the approach of the fingers to the eyes during sleep. Light was excluded.

Now since it is shown that suppuration is invariably the result of pyogenic microbes, the idea of the necessity of perfect quiet for several days is abandoned. The comfort of the patient is made a matter of study. He seldom has any pain. He sits up on the second or third day, and the increased comfort enables him to pass the week until the bandage is removed, without being troubled with home sickness, and without knowing of the dorsal and lumbar torture which still haunts many a victim of the confinement practiced in former times.



