

will cure all the ills which woman is heir to. I most fully appreciate the need of the gynecologist, and recognize in the highest degree the splendid work which has been accomplished by them in the relief of suffering women. But from experience I know that many cases of uterine disorders can be relieved and indeed cured by full and adequate general medical treatment, including attention to and rectification of a faulty urinary secretion, which had too often been previously neglected. I can not do better than to close with a quotation of the final part of Dr. Etheridge's excellent paper.

"No intimation is here given that this is the most important factor in diseases of women. To set up such a claim would be most absurd. The aim of this article is solely to call attention to one line of treatment that has been all but universally neglected heretofore, and to invite observation and original investigations.

"There is the gravest reason for thinking that a very close relation, even that of cause and effect, exists between renal insufficiency and pelvic disorders. The developmental phase of the renal and generative organs constitutes that reason. Embryologically these two sets of important organs arise from the same source. The mesoblast in the ovum gives rise to the muscles, bones, circulatory and lymphatic systems, the urinary and generative organs. From this fact it becomes an easy matter to infer that derangements in one set of these organs can produce, in a reflex way, if you please, or at least are very frequently associated with, derangements of the other.

"Since observation shows the numerous cases of coexistence between renal insufficiency and neuralgias, mucous membrane disorders and serous membrane inflammations, one can not question the possibility of this insufficiency producing or permitting amenorrheas, dysmenorrheas, leucorrheas and attacks of pelvic peritonitis. It is strongly emphasized that the position is not assumed that all cases of these disorders are produced by renal insufficiency, but from the fact that many of them are relieved by including in the treatment remedies that increase the urinary solids, the conclusion can not be resisted that cause and effect actually exist between many of them and the deficiency of urinary ingredients."

4 East 37th Street.

#### IMPLANTATION OF A GLASS BALL FOR THE SUPPORT OF AN ARTIFICIAL EYE AND MULES' OPERATION FOR THE SUBSTITUTION OF ENUCLEATION OF AN EYEBALL.

Presented to the Section on Ophthalmology, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

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The satisfactory results attending evisceration for the better support of an artificial eye have led me to implant a glass or silver ball in those cases where the eyeball had been enucleated at an earlier period.

After an enucleation, and the artificial eye is adjusted, we have the objectionable enophthalmus and a fixed eyeball stare. Owing to the sinking of the artificial eye the secretions are retained in the cul-de-sac and in a short time we have the muco-purulent

discharge, which adhere to the margin of the lids and also crust the anterior portion of the artificial eye, rendering the wearing of it most objectionable.

It was to overcome these objections that Mr. Adams Frost of London, in 1886, practiced the insertion of a glass ball immediately after enucleation of an eyeball. His method was as follows: After incising the conjunctiva all around the cornea, each rectus muscle was raised on a hook, seized with forceps, severed from its attachments and secured by a ligature; the eyeball was then removed and the glass ball introduced. The tendons were next united across the ball by means of the sutures previously passed through them, and finally the conjunctiva was brought together. Out of seven cases, Mr. Frost could only claim one successful operation.

Mr. Lang of Moorfields improved on Frost's method by placing the artificial globe in Tenon's capsule, which was sewed up and the conjunctiva then sewed over this. I have followed this method where the eyeball was atrophied and in several cases of simple enucleation, very successfully.

It is where the eyeball has been removed and when shrinking of the tissues has taken place that the implanted globe proves its value.

My first three operations were performed in 1895, and during the year 1896 I performed fourteen operations. In five of these cases the stitches broke and the glass ball came out. After two months I performed the second operation in the same socket. In two of these cases I operated the third time before the glass ball remained. I have found that it is useless to try restitching where the thread has cut its way out. If the wound does not heal by first intention the glass ball will be expelled by tissue contraction in spite of all protective measures.

My method is as follows: An incision is made through the conjunctiva and tissues of the orbit in the horizontal direction, corresponding scant to the diameter of the glass ball to be inserted; for instance, if the glass ball is one centimeter in diameter, the cut would be two millimeters less. The upper lip of the conjunctiva is raised, and with a sharp-pointed, curved scissors the conjunctiva and such connective tissue which lies close to it is dissected off in all directions around the incision, making a pouch into which the glass ball will fit. On account of the vascularity of the parts considerable bleeding follows this dissection, but it is easily controlled by pressure. After the bleeding stops the glass ball is inserted into the cul-de-sac with the injector. The edges of the conjunctiva are brought together by five or six stitches. Experience has taught me that it is well to keep the pressure bandage over the orbit from forty-eight to seventy-two hours. With the aseptic measures adopted in carrying out the details of the operation there will be little or no reaction. In the very few cases (two) where there was more or less pain, a few hypodermics of morphia controlled this. As regards the permanent stability of the implanted ball, time alone will tell, but of the fourteen operations performed in 1896, two balls came out ten months after the operation. There was a gradual thinning of the tissues over the globe, which was probably caused by posterior contraction of the orbital tissues, or possibly the artificial eye pressed so pronouncedly against the ball as to impede circulation, causing considerable attenuation and eventually rupturing of the conjunctiva, allowing the glass ball to escape.

## MULES' OPERATION (EVISCERATION).

During the year 1896 I performed twenty-eight operations at the Medico-Chirurgical Hospital.

In regard to this operation I do not know that I can add any original point or suggestion to what I have already stated elsewhere. As time goes on and my experience becomes greater the more firmly am I convinced that ophthalmic surgery has been much benefited by adding this operation to its list, and like Brudenell Carter, I may say that "I am performing it with increasing pleasure on every available occasion."

Dr. Mules has given us the following table, which shows the advantage of this operation over that of enucleation:

ENUCLEATION	VERSUS	MULES' OPERATION.
1. Complete removal of globe and its contents.	1. Retention of the framework of the eye.	
2. No stump, therefore sunken eye.	2. A firm, round globe forming perfect support for artificial eye.	
3. Disturbance of all muscular relations and arrest of movement.	3. Perfect harmony of muscular movement retained.	
4. A fixed staring eye attracting attention.	4. Fitted with selected eye defects detection.	
5. Patient shuns society.	5. No qualms as to personal appearance.	
6. Arrested development of orbit in case of children.	6. No interference with growth of orbit.	

Mr. T. Herbert Bickerton of Liverpool, who has had the largest experience in England, always prefers evisceration to enucleation. In a recent letter from Mr. Bickerton he states that he is substituting silver balls for glass ones. Since January of this year I have also substituted silver balls, not for the reason that any change is made in the technique of the operation, but simply that no possible danger could arise of the breaking of the silver ball, which might remotely happen to a glass ball.

I repeat my method of performing this operation: The eye is thoroughly irrigated with a lotion, which I call formula No. 1<sup>1</sup> to designate it from almost the same formula for sterilizing instruments.

The eyelids are separated with the ophthalmostat. The conjunctiva is dissected off from its corneo-scleral attachment back to about the equator of the eyeball, the muscles also separated; then the cornea is excised. This is best done with a large Beer knife, as if performing a flap operation for cataract, the lower half of the cornea is removed with curved scissors, and the contents of the globe are taken out with a small scoop devised for the purpose.

Great care is necessary to remove the ciliary bodies and choroid and the head of the optic nerve, leaving a clean white sclera. Mr. Carter has devised a rubber bulb which is inserted into the scleral cavity and inflated with air to produce pressure on the central artery to prevent hemorrhage. As this application has not been a success with me, I pack the scleral cavity with sterilized gauze. After waiting a few minutes this is removed, and the contents of the scleral cavity are again thoroughly irrigated with antiseptic fluid and again packed. A sterilized glass globe, which is best suited to the case, is then inserted with a specially devised instrument. The sclera is split

## IRRIGATING FLUID.

Hydrarg. bichlor.	grains 150.
Zinci sulphocarbolicis	grains 30.
Aq. menth. pip.	drachms 2.
Aq. camph.	
Aq. destil.	aa ounces 2.
M. ft. sol.	

The same lotion without the hydrargyrum is used for sterilizing instruments.

vertically so that the edges may be drawn together and held by stitches of No. 4 black silk, using large needles, completely hiding the glass ball. The orbit is again thoroughly irrigated with the hot solution and the socket packed with sterilized gauze. This dressing is kept wet day and night for twenty-four hours, when the eye is bathed with hot water and fresh dressings applied and continually saturated with the lotion, over which is bound a sterilized bandage.

At the end of twenty-four hours the upper eyelid is somewhat swollen, puffy and edematous, but the tumefaction gradually disappears. As a rule, the conjunctival sutures are not removed under six or ten days. It is important that both eyes are kept bandaged for at least six days. By allowing the liberty of one, too much rotation of the eye is permitted and, as a consequence, the antagonistic muscles of the operated eye pull apart and there is greater pressure brought against the sutures, which are liable to be torn out, a probable cause in several of my cases.

From the large number of operations now under observation, and no unfavorable ones reported, it may be considered a very safe one, and if we have in evisceration a method equally as safe as in enucleation, why not give the patient the advantage of the new method.

*Résumé.*—The total number of operations performed up to the present writing numbers eighty-two, and so far as I have been able to keep trace of them no serious results have followed any, such as sympathetic irritation or meningitis. In two cases the glass ball came out after two months. I have eight cases which did not heal by first intention and the balls came out before the patients left the hospital. I must attribute these failures to too rapid absorption of the catgut, or the glass balls being too large and the swelling of the tissues causing the silk to cut through the sclerotic and conjunctiva.

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## AN EXPERIMENT ON A RABBIT'S EYE, TO OBTAIN AN ELASTIC, UNBREAKABLE "ARTIFICIAL VITREOUS BODY" AFTER EVISCERATION.

(MULES' OPERATION.)

Presented to the Section on Ophthalmology at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

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Dr. J. Herbert Claiborne of New York City presented a paper on this subject at the Forty-seventh Annual Meeting of the Association, at Atlanta, Ga., at which he described his experiments and drew conclusions on the subject. After reading his excellent paper (*JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, Nov. 21, 1896, p. 1091) I was stimulated to try an experiment in this direction.

It is conceded by ophthalmologists that enucleation does not leave a sufficiently prominent and movable stump in the socket to afford the accurate and comfortable fitting of glass eyes. The objection to the introduction into the eviscerated scleral cavity of Mr. Mules' glass balls are that they subject the ciliary nerves to a constant pressure between two hard and unyielding surfaces, that glass balls are subject to fracture and that they are difficult of introduction.