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Contributors

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A CASE OF VESICULAR KERATITIS WITH A FILAMENTOUS FORMATION OF THE DETACHED EPITHELIUM.

BY

BURTON CHANCE, M.D.

PHILADELPHIA.

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A CASE OF VESICULAR KERATITIS WITH A FILAMENTOUS FORMATION OF THE DETACHED EPITHELIUM.*

By Burton Chance, M. D.,
Philadelphia,

Assistant Surgeon, Wills Hospital; Ophthalmologist to the Germantown Dispensary and Hospital.

A young Irish woman of twenty-six years of age came to the Wills Hospital on January 9, 1906, stating that she had been seized with pain suddenly in her right eye several days before. The pain had persisted, and it was great even at the time of the examination. The girl feared she had splashed ammonia water in her eye. She declared that no one had attempted to remove from it any suspected foreign body, nor had she had treatment for the condition complained of.

The appearance of this eye resembled that seen in the case of workmen on whose corneas flying foreign bodies have lodged, and who have been under the tender ministrations of their fellows, who, as Dr. W. F. Norris used to say, "had removed the eye from the foreign body." The globe was greatly injected and somewhat chemosed, while the cornea was denuded of epithelium over nearly its entire surface. The edge of the ring of epithelium remaining was irregularly dentated. The substance of the cornea was not affected specifically, except by a diffuse œdema; neither was the iris, for the pupillary reactions were preserved. The left eye was perfectly healthy.

I considered the condition to have been caused by a traumatism. The eye was carefully cleansed; the singularly insensitive cornea was anointed with iodoform ointment, and a light patch bandage was applied over the closed lids. Four days later, the symptoms remaining unchanged, an ointment containing atropine and

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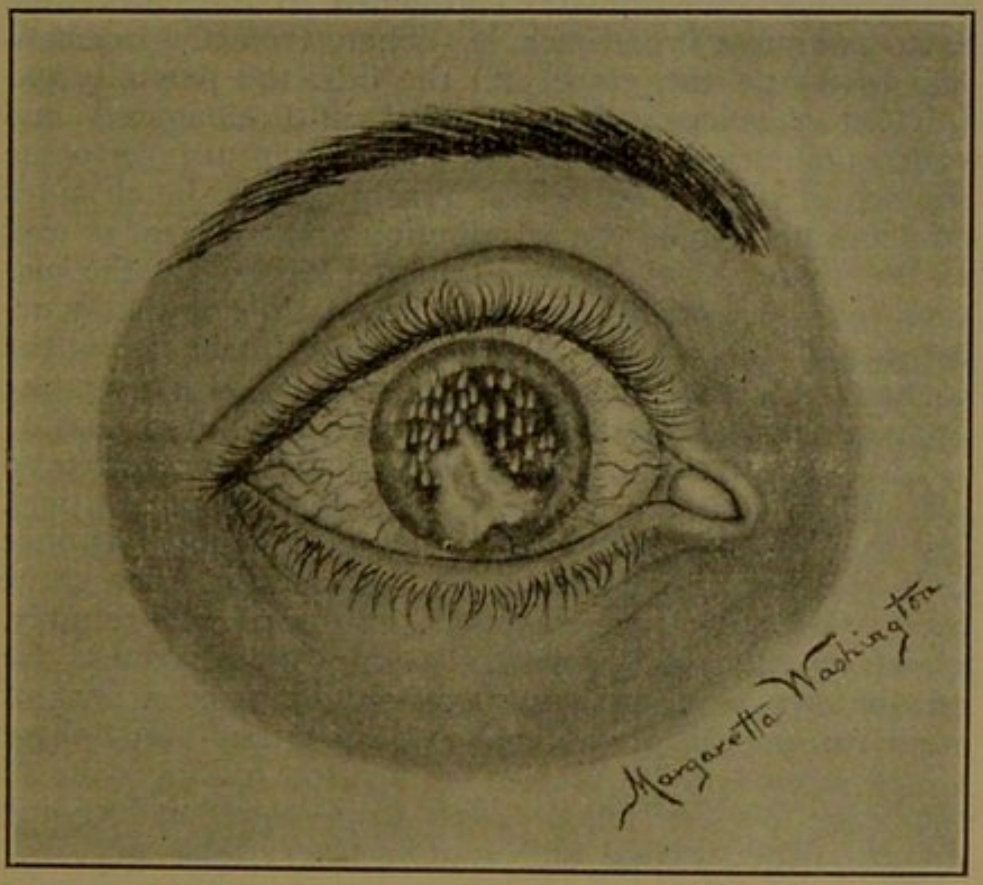
quinine was used on the cornea. The lids were sealed with strips of court plaster, and a large compress was adjusted. The girl then went to visit her sister, who was employed as a domestic in the house of a physician not far from the hospital. The next day this physician telephoned to me that the patient had been delirious for twelve hours, and he feared she had been poisoned by the medicaments used in the eye. The young woman came to my office on the following day, but no changes had taken place in the eye. Again simple cleansing lotions were used, the lids were sealed, and the patient was sent to her own home. Her mistress, by whom she was employed as a cook, desired to withdraw her from hospital care, and requested me to visit her, because she had become too weak to go out. Accordingly, I visited the patient late in the afternoon. She was in bed, feverish, with a coated tongue, and in a decided general malaise. After daily visits to her she was able to come to my office again in five days. The corneal lesions remained unchanged. Carbolic acid was then applied to the edges of the epithelium, and this time a firm compressive bandage was put on. A bitter acid tonic mixture was also prescribed.

On the next day it was noticed that the epithelium had increased with singular rapidity. At about the centre of the denuded area there was a small spot of exudation infiltrating the lamina of the cornea, and, more superficially, at a short distance above this dense globular deposit, were four areas, in shape like distant flying gulls, very much resembling the tracks of dendritic keratitis. These new formations, which were confined to the substance of the cornea, were sharply outlined by fluorescein stain. In addition to the other mixture, one of the bichloride of mercury and the syrup of hydriodic acid was ordered.

In two days the epithelium was almost entirely restored. The general inflammation had greatly subsided, while the cornea was becoming vascularized. At the end of a week only a small erosion remained; the surrounding surface was moderately glistening and the entire cornea was more sensitive to manipulations. A solution of taropine and ethyl morphine hydrochloride (dionin) was then ordered to be used daily.

On February 8th, after an absence of one week, the

patient returned in great discomfort. The cornea was again denuded, while the surrounding recently intact surface was studded with tiny clear vesicles and with what appeared to be the remains of ruptured vesicles. Late in the evening the vesicles appeared in greater number. The cornea was again quite insensitive, and there was a slight pericorneal injection. Before a firm



bandage was again applied over the lids an ointment of aristol was smeared over the surface of the cornea. This state continued unchanged for eleven days, when, on February 19th, together with greater pericorneal injection, there was an eruption of over thirty vesicles.

These vesicles were scattered irregularly over the cornea, being discrete in their arrangement and of equal size, approximating one millimetre in diameter and resembling seed pearls. They were not perfectly translucent. On a superficial examination they reminded one of the eruption of sudamina that one sees occasion-

ally on the trunk of a man who has taken violent exercise, or on others in the course of the continued fevers. They arose clearly above the substance of the cornea, and were demonstrably of epithelial formation only, as there were no signs of a ring of infiltration surrounding their bases.

Their course was rapid, for, within forty-eight hours, the vesicles burst at their bases, except at the upper sixth; here they remained attached to the epithelium by a somewhat broad pedicle. Then, from the mechanical action of the globe and the lids, the partially exfoliated membrane was molded into elongated and rolled pellicles, which gave a shaggy appearance to the surface of the cornea. Miss Washington's sketch gives an accurate idea of the distribution and the size, as well as the shape, of these desquamated flakes, yet the picture fails to convey the exact impression of the structures and their color as they hung intact from the cornea. I could liken them to nothing else than the appearance of the ova of pediculi glued to a hair shaft.

With fine forceps six of these flakes were stripped off. They were too cornified to be teased out flat, and, lest they should be lacerated, they were stained at once in a solution of gentian violet. Under the microscope they appeared to be squamous epithelial cells simply, glued together and rolled into convoluted cones. In one or two specimens there appeared to be a sort of stem running through them, but on closer study these stems proved to be formed by a close folding over of the edge of the flake. The cells were undergoing mucoid degeneration and contained granular débris.

The insensitiveness of the cornea was intense, for the flakes were torn from it without there being the slightest evidence of pain. After the flakes had been cast off the surface of the cornea appeared to be pitted, as though one had gone over it, pressing the point of a fine probe into it. The underlying cornea was not at all infiltrated.

There were repeated crops every two or three days; the cycle of their evolution and involution appeared to be most rapid when the pure tincture of iodine was applied to them.

On February 20th Dr. de Schweinitz saw the patient with me, and he recommended that the girl should be

kept in bed. The next day Miss Washington made the accompanying sketch. Immediately after this was made I swept the cornea clear with a swab moistened with undiluted tincture of iodine, and no more vesicles have since appeared.

To Dr. Schwenk I am indebted for the privilege of placing the patient in the wards of the Wills Hospital, as well as for the opportunity of managing the case from the first. After her admission to the hospital, on February 22nd, she was kept in bed for ten days. The collyrium of atropine and ethyl morphine hydrochlorate (dionin) was continued, and the eye was covered with only a light bandage. A saturated solution of sodium salicylate, which had been prescribed three days before, was administered in twenty drop doses thrice daily after meals.

The course from then on was one of steady improvement. In five days the large area had contracted greatly, and was becoming more and more vascular, while the surrounding surface regained a healthy smoothness and lustre. After two weeks' stay in hospital the patient was discharged on March 6th, just two months after the first attack. On March 13th the epithelium was entirely restored, and, except for the large and very vascular nebula which remained in the lower portion, the cornea was clear and sensitive. On March 29th the vision was equal to $^{5}/_{7.5}$, as the transparency of the entire cornea was complete.

I have not seen a case of filamentous keratitis. Nothwithstanding my lack of experience, in the clinical study of that affection, I do not consider the case here reported to be an instance of it.

The features of my case are as follows: A young woman of the nervous lymphatic type, received a slight injury to the cornea of one eye, although there was much uncertainty as to the exact nature of the occurrence of it. It is presumed that the supposed injury gave rise to the formation of a large bleb composed solely of the epithelium of the cornea. In a short time the bleb burst and exposed the true cornea; and, for some distance beyond what might

be considered to be the base of the bleb, the epithelium was loosened from the underlying cornea. It was not until several days after the bursting of the vesicle that any unhealthy changes in the appearance of the lamina were manifested. In addition to a faint, diffused œdema, an irregular tract of infiltration was noticed. There was no superficial necrosis, neither was the endothelial membrane visibly affected. The iris maintained its healthy reactions.

For many days it was impossible to reapply the loosened membrane and to promote the covering of the denuded area. When at last this began to be favorable, the surface of the cornea became studded with tiny vesicles. In the course of a day or two, these vesicles burst, and instead of the walls of them being cast off from the cornea, they remained attached to it by single pedicles. From the action of the globe and the eyelids, these epithelial remains were moulded into scrolls, or filaments, which were ultimately cast off. No signs of infection of the true cornea were observed during the evolution and involution of these vesicles. The eruption of vesicles was repeated several times, while their course did not vary for several weeks.

Various plans of treatment were pursued without avail until after all of the filaments had been scraped off and the pure tincture of iodine applied to the surface of the cornea. The patient was then confined to her bed for two weeks. A cure has resulted. The cornea has a healthy appearance, and the vision is only slightly reduced. The exfoliated fragments of the membrane were composed only of degenerated epithelial cells.

I do not believe it possible for an injury to the cornea to cause so great a loss of the epithelium without there being also other signs of greater destruction of corneal tissue than were seen in this eye.

This case appears to me to be one of neuropathic disease of the cornea, associated with a lithæmic or rheumatic diathesis. I have conceived it to be somewhat of the order of herpes, involving at first a single locality. Because of a great loss of the protecting epithelium, there was excited a general œdema of the cornea. The loosened epithelium hindered the steady onward flow of the serous fluid so that it escaped from the lamina, and was held beneath the epithelium in the form of droplets.

235 South Thirteenth Street.