PAPILLOMA OF THE CORNEA.

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In the case here reported the growth recurred showing the tendency of such tumors to become malignant. Other cases of the kind are cited. Read before the Chicago Ophthalmological Society.

The following case is reported be-the cornea and the conjunctiva, except cause the papillomatous type of neoplasm involving the cornea, is exceedingly rare. This case came under my observation at the Illinois Charitable Eye and Ear Infirmary on September 24th, 1919.

HISTORY. Mr. G., age 70, married, father of nine children, wife living. Father died when patient was four years old, cause unknown. Mother died at age of 61, cause unknown. No history of malignancy in family. Stone cutter by trade. Smokes moderately. No history of injury. Patient states that about thirteen months ago he first noticed a small red spot on the eyeball at the inner canthus. This small tumor like mass gradually increased in size and spread out until at present it covers four-fifths of the cornea.

He has never had any pain and there has been no hemorrhage. Only its gradual increase in size and unsightly appearance, with a gradual narrowing of the field of vision, has caused him to seek relief. His vision at present is R. fingers 3 ft. L. 18/200.

The macroscopic appearance is that of an extensive granular tumor, pinkish in color, raspberry appearance, firmly attached to the corneoscleral margin and lying rather freely upon the eyeball. From its firm attachment at the limbus, it spreads out like a fan beneath the upper and lower lid and extends over the caruncle to the farther point of the inner canthus of the eye. The tumor is attached to a small area of the cornea on the nasal side and spreads out loosely like a flap over the cornea so that only a small section of the pupil and iris are visible on the temporal side. A probe can easily be passed beneath the tumor all around

where several large blood vessels appear to pass from the center of the tumor beneath and thru the conjunctiva to the inner angle of the eye. (See plate IX).

The tumor bleeds readily when grasped by the forceps, in this respect resembling granulation tissue. There is no involvement of the eyelids and there are no enlarged lymphatic glands.

MICROSCOPIC EXAMINATION.—On October 9, 1919, a small section of the tumor was excised and given to the Chicago Laboratory for examination; and the following report was made, by Dr. Thomas L. Dagg: "This is a papillomatous structure and does not give sufficient evidence to warrant a diagnosis of malignant change. There is not enough of the subepithelium in the specimen to make a satisfactory examination."

After the operation, sufficient material was obtained for a thoro microscopic examination and I append here the report of the pathologist, Dr. Francis Lane, January 7, 1921.

"The specimen is comprised of epithelia and connective tissue.

EPITHELIA.—The basal cells are cylindrical with deep staining, elongated nuclei and form an unbroken stratum. All stages of differentiation, from stratum germinativum to stratum corneum, are present with an over production of prickle and granular cells. The stratum corneum is reduced to one or two cell layers, evidence of fluid contact.

CONNECTIVE TISSUE.—Loose, vascularized, eosin staining tissue, with areas of small round cell accumulation, characterize true papillae formation. The growth, therefore, consists of a

proliferation of papillae with a corresponding interpapillary indipping of epidermal elements, the basal cells of which constitute an unbroken wall.

DIAGNOSIS.—Papilloma, with mild secondary inflammatory reaction."

OPERATION.—Under cocain anesthesia and with blunt pointed scissors, the tumor was dissected as close to the cornea as possible. Both the knife and curette were used in an attempt to remove all of the tumor from the cornea, but this was found to be rather deeply imbedded. There was considerable bleeding which was easily checked. The base was cauterized by the actual cautery. The cornea began to clear and the conjunctiva bulbi was entirely free of the tumor.

In about two weeks, however, there was a recurrence of the tumor over the cornea and there were two large blood vessels which were distinctly seen passing from the tumor into the conjunctiva.

The patient was again placed upon the table and the eye cocainized as before. The two large blood vessels were picked up near the limbus and ligated and the tumor cauterized, as before, by the actual cautery.

The blood vessels disappeared and the cornea then became almost perfectly free of the growth. The cautery was used on two other occasions when there was only a faint trace of the tumor remaining on the upper part of the cornea. Patient remained away for several months but recently returned, and I have been obliged twice to cauterize the recurring tumor.

HISTORICAL.—Epibulbar tumors, whether benign or malignant, originating in the cornea proper, are of rare occurrence. Most of the tumors involving the cornea have their origin in the corneoscleral margin or in the conjunctiva and spread until they involve the cornea. According to Greeff,¹ epibulbar tumors begin almost invariably in the corneoscleral margin and very seldom in the central area of

the conjunctiva bulbi. Virchow, referring to the origin of these tumors, speaks of deeply pigmented connective tissue cells appearing in the corneal margin and small black flecks (melanomata) composed of such cells, which are genetic in the formation of new growths. The cause of their development is difficult and at times impossible to ascertain. They may follow slight injury or evolve from scar tissue in the margin of the cornea.

Fuchs,² also, refers to isolated instances of papilloma beginning primarily in the cornea.

Veasey³ has recently reported an interesting case of epibulbar epithelioma, which probably began as a papilloma and later became malignant. This case clearly demonstrated the importance of the complete removal of the tumor and the tendency in some to become malignant.

In the author's case, there has been a marked tendency to recurrence of the tumor in spite of repeated removal and cauterization. A most interesting case, and one which is described as an exact parallel of the author's in that it had the cauliflower, raspberry appearance made of clusters of small papillae, is reported by Coover.⁴ The important point to be considered is that after removal, this growth did not recur for ten years but then returned as a malignant neoplasm, a basal celled epithelioma.

J. Herbert Parsons⁵ refers to a number of cases of epibulbar tumors reported by various writers, and in all these cases the origin was in the limbus.

Stieren⁶ reported a case of epithelioma of papillomatous type similar to that of the author's. After removal of the tumor, the site of the growth was treated by X-ray and there has been no recurrence of the growth. Where frequent recurrence takes place, as in the case herein reported, the question of malignancy must be kept in mind. When last seen the cornea was almost free of the growth.

BIBLIOGRAPHY.

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