Angioma of the lachrymal gland extending to the apex of the orbit : removal with preservation of the globe, functions of the eyeball and of the external ocular muscles, with the exception of the levator which was involved in the growth / by G. E. de Schweinitz.

(13)

Angioma of the Lachrymal Gland extending to the Apex of the Orbit; Removal with Preservation of the Globe, Functions of the Eyeball and of the External Ocular Muscles, with the exception of the Levator which was involved in the Growth.

By G. E. deSCHWEINITZ, M.D.,

PHILADELPHIA, PENN.

[*Reprinted from American Ophthalmological Society Transactions, 1898.*]

ANGIOMA OF THE LACHRYMAL GLAND EXTENDING TO THE APEX OF THE ORBIT; REMOVAL WITH PRESERVATION OF THE GLOBE, FUNCTIONS OF THE EYEBALL AND OF THE EXTERNAL OCULAR MUSCLES, WITH THE EXCEPTION OF THE LEVATOR WHICH WAS INVOLVED IN THE GROWTH.

By G. E. deSCHWEINITZ, M.D.,

of Philadelphia.

Walter D., aged 18, born in the United States, unmarried, came to the Jefferson Medical College Hospital May 21, 1896, and consulted Dr. Joseph Hearn with the hope of obtaining relief from a growth which occupied the upper and outer portion of the orbit and appeared on the surface of the eyelid. Dr. Hearn very kindly referred the patient to me for treatment and operation.

History. — There is nothing noteworthy in the family or personal history of the patient, except that he was of somewhat feeble mental development and was subject to fits of depression and periods of explosive anger. The growth for which he sought relief had been noted first in early childhood; in fact, in all probability it was congenital in its origin. No similar growth had appeared in any other member of his family.

Examination. — The patient was a well-grown lad in good physical condition, all organs apparently being sound. He was somewhat morose, but very anxious to be rid of the deformity, which appeared to prey upon his mind.

Eyes. — V. of R. E. equaled 20/40 without correction. The ophthalmoscope revealed an irregularly oval disc, rather pallid in color, and an underlying conus down and in. The arteries were normal in size; the veins full, dark and slightly tortuous. There were no abnormalities of the retina or choroid.

The upper and outer angle of the orbit was occupied by a growth which spread out upon the skin of the lid, occupying its outer two-thirds and extending beyond the edge of the orbit. Over the tumor the skin was quite loose and the growth itself was of a bluish color, giving the impression that its composition

was a collection of large purplish vessels. Eversion of the lid demonstrated a similar tissue beneath the conjunctival surface, the purplish mass beginning at the edge of the cartilage and passing back to the retrotarsal fold and inward toward the orbit and outward to its external margin. In front of the ear on the same side there was a small cavernous angioma 1½ inches in length and 1 inch in width, but not communicating with the growth on the lid. Behind the ear there was a varicose vein extending along the edge of the sterno-cleido mastoid.

V. of L. E. equaled 20/40 without correction. There were no abnormalities of the eyeball or its appendages, or of the external ocular muscles.

On the 29th of May, with the kind assistance of Dr. Hearn, I dissected the tumor entirely from its bed. There was no difficulty in separating the overlying skin from the growth itself, which gave the impression of a tangled mass of large blood vessels loosely enclosed in a delicate sheath of tissue, and which passed outward and backward into the orbit, dwindling gradually to a narrow point, which was finally lost almost at the apex.

During the dissection there was little or no bleeding, but from several points of puncture a slight oozing, so that when the growth was finally removed it was in a collapsed state.

The wound on the skin surface was closed with interrupted silk sutures, that on the conjunctiva, where it had been torn in one or two places, with similar sutures. The recovery was uninterrupted and without reaction, but there was marked limitation in the movement of the upper lid, evidently due to interference with the fibers of the levator, which, as subsequent microscopic examination showed, were involved in the growth. The function of the eye and of the other eye muscles was normal. The boy was told to return for an operation to relieve the ptosis, or partial ptosis, for the lid was not entirely closed over the ball. This, however, he failed to do.

The growth proved to be of flattened triangular shape and resembled somewhat a collapsed cyst. After hardening in Müller's fluid, sections were cut by Dr. J. Dutton Steele from its base, center, and apex, and stained with thionin and eosin and haematoxalin and eosin.

(1) Sections from the base of the tumor, which had occupied a position in the upper and outer angle of the orbit and beneath the skin of the upper lid, show an external covering of loose coarse

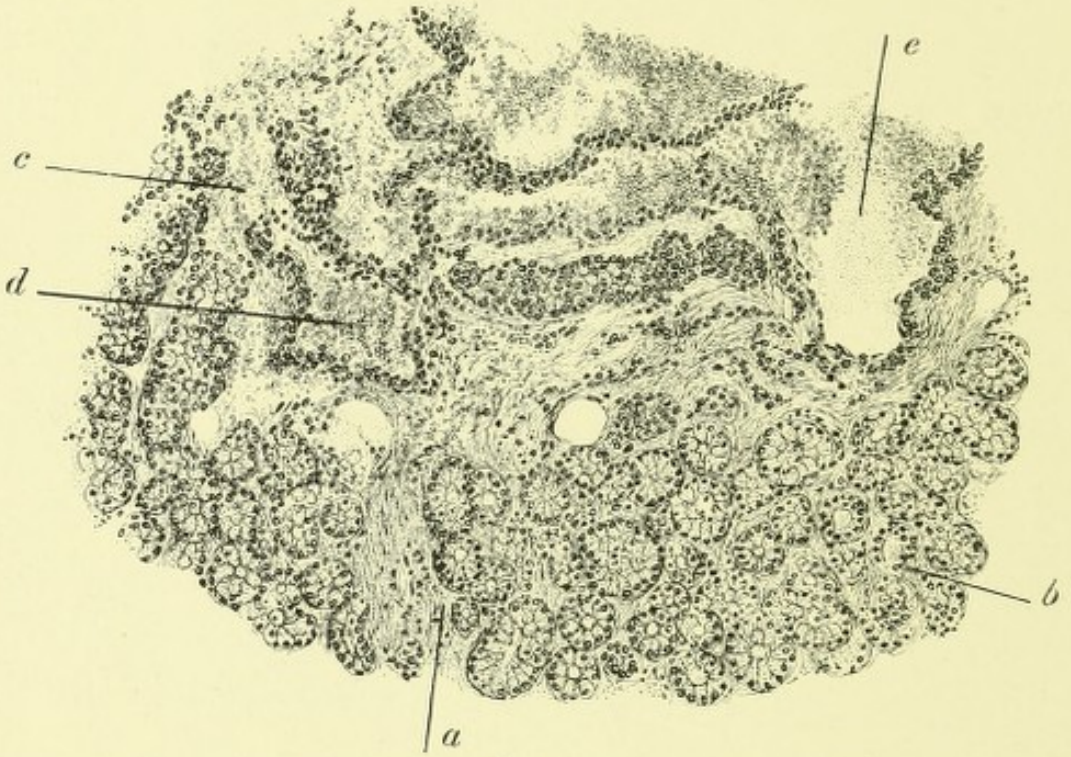

FIG. 1.

Angioma of Lachrymal Gland. (Zeiss' Ocular 4, obj. 16,0 mm.)
a, Inward prolongation of connective tissue coming from external covering. *b*, Lachrymal gland tissue. *c*, Entrance of blood between acini. *d*, Formation of a blood space. *e*, Fully formed blood cavity.

connective tissue containing in its meshes free blood corpuscles, pigment grains, granular débris, blood vessels, and nerve filaments. At intervals prolongations of this tissue pass inward toward the deeper portions of the growth. Immediately succeeding the connective tissue investment is a structure in all particulars repeating that of the lachrymal gland — acini limited by basement membrane and lined by secreting cells with granular protoplasm and conspicuous nuclei, and interacinous connective tissue. In part invading and in part replacing the glandular structure is the typical formation of a cavernous angioma — variously shaped cavities filled with blood and lined with endothelium. (Figure 1.)

(2) Sections from the center of the growth contain besides the glandular tissue and the angioma much loose connective tissue, fatty tissue, and muscle fibers, and evidently represent that part which existed in the upper portion just within the entrance of the orbit.

(3) When the apex of the tumor is reached there is an entire disappearance of the glandular tissue, and in its place we have the fully formed angioma, with large cavernous spaces lined with endothelium, separated by trabeculae composed of fibrous tissue containing numerous round and spindle cells. (Figure 2.)

Remarks. — When cavernous angioma is found in the liver the origin of its cavities in dilatation of the pre-existing blood vessels of the lobules can often be discovered. In the present growth a similar origin is discernible in some places and the dilated capillary vessel can be followed into the expanded blood space. The angiomatous process develops by an interacinous insinuation, seen in all stages from a few blood corpuscles lying between the acini to large and well-formed cavities, and as the acini are pushed aside they are mutually pressed against each other and individually compressed so that they help in the formation of the trabecular network which separates the blood-containing cavities. Under such an invasion the gland tissue gradually gives way and is finally destroyed by this cavernous transformation. (Figure 2.)

Scattered through the lobules of gland tissue are not infre-

quently to be seen small foci of deeply-stained round cells (inflammatory tissue), sometimes in connection with dilated vessels or small blood cavities. This appearance suggests Virchow's hypothesis of the formation of angiomas in glandular tissue, viz., that the first stage is not dilatation of the blood vessels, but the deposition of granulation tissue in which the vessels and vascular spaces are afterwards formed. It is not unreasonable that both methods of angiomatous formation were active in this growth.

It is probable that the angioma originally started in the tissue of the orbit (a common habitat), and that the gland became involved as a secondary result.

As the gland tissue in all particulars resembles the normal lachrymal gland and not a new formation of gland tissue, it seems more accurate to classify this growth as an angioma involving the lachrymal gland and not as an adeno-angioma.

Tumors of the lachrymal gland are not uncommon, especially adenomas and sarcomas, but an angioma of this structure is of much less frequent occurrence; indeed, it is not mentioned in most of the text-books. Von Graefe observed an angioma of this gland (clinically only) in 1866, but since then, if a somewhat hurried search of the literature may be trusted, there is little mention of the subject.

FIG. 2.

Fully Formed Angioma, From the Apex of the Growth.
(Zeiss' Compens. Ocular 4, obj. 16.0 mm.)