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A CASE OF FIBRO-PLASTIC TUMOR OF THE
BASE OF THE SKULL, ASSOCIATED WITH
LEUCOCYTHÆMIC CHANGES IN THE
BLOOD AND SEVERAL GLANDULAR OR-
GANS.

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L. G., æt. 22; height 5 feet 4 inches; weight in health 140 lbs. Sanguineo-lymphatic temperament; fair complexion; brown hair. Always well until commencement of present disease. Mother died of pulmonary phthisis at 49, and one sister of the same disease at 21; otherwise no hereditary disease in family. Married at 19, and gave birth to a child in 1866, which is now healthy and robust; became pregnant again in July, 1867, and aborted in September of the same year. Menses appeared only twice subsequently.

In June, 1867, a small, hard tumor was noticed in the right parotid region, which grew slowly for one year. Subsequently several smaller ones appeared, some of them extending along the submaxillary region. Six months after the appearance of the primary tumor on the right side, a similar one appeared in the same locality on the left side, which in turn was followed by several smaller ones in and about the parotid and submaxillary regions of the same side. She suffered pretty constant and severe pain in and about the original tumor of the right side from the time of its appearance until two or three months previous to the time of her decease. There was never any severe pain in the left side.

Three months since three or four small patches of ulceration appeared in the skin about the right temporal region, and continued in this condition until her death. These ulcerations, however, were very superficial. About two months since the right eye became unnaturally prominent and continued so for some time, when a small discharge of pus took place from two openings—one just under the supra-orbital ridge,

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and another just over the inferior border of the orbit—after which the eye resumed its natural position and appearance. About the time the eye became protuberant it also lost the power of vision and motion, and paralysis of the upper lid also occurred. There was no anæsthesia of the globe of the eye or integuments of the head and face. Neither was there any strabismus at any time. All the other special senses were perfect, with the exception of that of smell, which was somewhat impaired. About this time she also became subject to mild clonic convulsions, which generally came on while she was sleeping, and lasted from five to thirty minutes, and occurred several times during the day and night. These continued until the time of her death.

During the last two or three months of her life respiration was performed entirely through the mouth, the nasal passages being obstructed.

During the first six or eight months of the disease the general health suffered comparatively little; subsequently it gave way, and during the last six months of her life she was confined to the house, and for the last two or three months to her bed. She became extremely emaciated during this time.

The appetite was good and digestion well performed throughout the entire duration of the disease, although for some time previous to her death there was some trouble in taking food, owing to a partial closure of the jaws and difficulty of deglutition, both being apparently produced by the pressure of the enlarged glands. There was no diarrhœa at any time. She was patient and cheerful, thinking until a short time before her death that she might recover. She continued to fail, however, becoming more and more prostrated, and died February 23d, becoming comatose three hours previous to her death.

The first time I saw her, 11, A.M., Feb. 3d, 1869, I obtained a specimen of blood from the tip of one of the fingers, which showed the white corpuscles to be considerably increased, there being from twelve to seventeen in a microscopic field of moderate size—the same field showing only one, and

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in some instances none, in blood from healthy persons. The temperature in the axilla at this time was 97°. The urine was normal. Another specimen of blood obtained Feb. 6th, six hours after the last food had been taken, showed a somewhat larger number of white corpuscles.

Sectio-cadaveris forty hours after death. **Emaciation** extreme. **Rigor mortis** slight. Chest 25 inches in circumference. Arm 4 inches in circumference around biceps. Thigh 7 inches in circumference at middle. A mass of glands in right parotid and submaxillary regions two-thirds the size of the closed fist; one gland, two by two and a half inches superficially, in left parotid region, together with several smaller ones in submaxillary region of the same side.

Head.—Several patches of ulceration in right temporal region involving only the skin, the underlying periosteum being healthy. Considerable serum in arachnoidal cavity. Brain rather less firm than usual, but no real softening. On removing the brain a morbid growth was found, involving the body of the sphenoid and basilar portions of the sphenoid and occipital bones, and extending into the right middle fossa of the base of the skull. The growth surrounded the second, third, fourth and fifth nerves of the right side, and the third and fourth of the left side. The bones involved by the disease were partially destroyed—absorbed. The portions remaining were cut through and the growth found to involve the ethmoid and portions of other surrounding bones, and partially filled the nasal cavities. Three or four mucous polypi occupied the remaining portion of the nares. The right orbital roof was cut through, and the post-ocular cellular tissue and eyeball found to be in a healthy condition, there being no evidence of having been suppuration in the orbital cavity. The morbid growth did not extend into the cavity of the orbit. The dura mater covering the growth appeared to be healthy.

Thorax.—Thymus gland enlarged, three and a half to four inches in length. Two ounces of fluid in pericardium. Heart normal; some coagulated blood in left side, and a firm white coagulum one-half inch in diameter in right ventricle, extending through pulmonary orifice and firmly interwoven with the columnæ carneæ; no blood on right side. Large venous vessels filled with dark colored fluid blood. Lungs pale anteriorly and somewhat congested posteriorly. Slight adhesion of right anterior pleural surfaces. One small cavity one-half inch in diameter in left apex, containing li-

quid pus; no communication with bronchia. Pleural wall of cavity one line in thickness, with no marks of pleuritic inflammation. Small portion of right apex filled with grey granulations, also one small cheesy mass.

Abdomen.—Liver, stomach, spleen and kidneys normal. Right ureter enlarged in diameter and constricted at entrance to bladder. Intestines normal, except one small glandular-looking patch, situated five feet above the ileo-cæcal valve, presenting the shaven-beard appearance of a Peyer's patch. Supra-renal capsules enlarged; three and a half inches in length, seven-eighths of an inch in breadth, and three or four lines in thickness in the thickest portion, and of a yellowish-red color. Pancreas slightly larger than usual. Organs of generation normal. The remains of a true corpus luteum, containing blood-pigment, were found in the right ovary, and a cyst three lines in diameter filled with reddish serum in the left.

Blood taken from the large internal venous vessels contained a relatively large number of white corpuscles, that taken from the splenic vein containing a very large number; one specimen showing fifteen white, to one hundred and fifty red, corpuscles. The white corpuscles in all the specimens examined were of full size.

Microscopic examination by Dr. John Homans showed the glandular tumors and the morbid growth at the base of the brain to be composed of small spherical and ovoid cells containing distinct nuclei and somewhat granular, together with more or less nucleated fusiform cells, but there were very many less of these latter in the glandular tumors than in the other morbid growth.

At the request of Prof. J. B. S. Jackson, I sent the specimen obtained from the base of the brain to Dr. Robert T. Edes, of Hingham, for minute dissection. The following is his description:

"The morbid growth seemed to be connected with the basilar portions of sphenoid and occipital bones, involving also the petrous portion of the temporal bones to a slight extent—the right the larger. Anteriorly I could not say very well what bones were involved, except that I recognized the clinoid processes anterior and posterior. The dura mater was spread over the upper surface and presented foramina for the passage of nerves; of these the second (optic) on the left side rested in a notch on the anterior portion of the tumor, and was apparently healthy. On the right side the notch was deeper and the distal extremity of the piece remaining with the specimen

was softened, and of a yellowish hue. Microscopically it presented many fat-granules, although a considerable portion of normal substance remained. The right nerve of the third pair was more deeply buried, and was adherent to the surrounding substance—was thickened and reddish. At the enlarged portion it presented a considerable proportion of fibrous tissue. At the point where it divided into its two branches to be distributed to the muscles of the eye, one branch contained much fibrous tissue, and few, if any, nerve tubes. Some parallel fibres were seen which were probably nerve fibres deprived of the medullary substance, since they did not present the usual dark bordered appearance. The other branch showed a very well marked condition of fatty degeneration, nearly all the fibres being dark and granular. The fourth nerve was found on neither side.

"The fifth was—on the right side—so deeply buried in, and closely united with the antero-lateral portion of the tumor that the branches a short distance beyond the Gasserian ganglion were very difficult to trace. The one which I did trace and which was probably the inferior maxillary division, was apparently healthy to the eye and to the microscope.

"The growth itself seemed to consist of fibrous tissue, with a great many small oval or elongated nuclei."

The fourth nerve on the right side had degenerated to a mere filament, and had probably been torn away in consequence of the prolonged handlings and examinations to which the specimen had been subjected previous to its being seen by Dr. Edes; on the left side the tumor was cut very near to the fourth nerve, which was probably likewise torn away.

A few points in this case are worthy of special notice.

The slow development of the disease and the still slower deterioration of the general health; the disease existing at least twenty months, and the patient being able to be about until a short time previous to her death.

The large relative increase of the white corpuscles of the blood taken in connection with the enlarged thymus and lymphatic glands and supra-renal capsules.

The loss of the physiological functions of some of the nerves involved in the morbid growth at the base of the skull, although the functions of the different nerves do not seem to have been impaired strictly in proportion to the apparent extent to which they were respectively involved by the dis-

ease. The right optic lost its function, as shown by the blindness of the eye of that side, the growth involving the nerve at some distance anterior to the optic commissure, which remained healthy. The substance of the right nerve of the third pair—*motores oculorum*—and also the right one of the fourth pair—*pathetici*—being involved, we should have expected loss of motion in the right eye, together with paralysis of its upper lid, and such was the case. Although the fifth nerve of the right side was deeply buried in the morbid tissues its functions were not much disturbed, which fact harmonizes perfectly with the result of the microscopic examination of its structure. The integumentary ulcerations in the right temporal region may have been due to degeneration of the auriculo-temporal branch, although, as previously stated, I could not detect any loss of sensation in any portion of the integuments covering the head and face. The functions of the other cranial nerves did not suffer impairment, with the exception of the sense of smell, which would of course be interfered with, in consequence of the existing obstruction of the nasal passages.

And lastly, the large relative increase of the white corpuscles of the blood, taken in connection with the enlarged thymus and lymphatic glands and supra-renal capsules, giving the case a decidedly leucocythæmic aspect when viewed independent of the growth at the base of the skull—as it was during life.

The morbid growth seems to have been identical with the *fibro-plastic* growth of Lebert and Paget, and the *sarcoma fusiforme* of some of the German pathologists.

What was the nature and cause of the disease? Was the morbid growth at the base of the skull the primary and main disease, and the glandular enlargements and increased number of white blood corpuscles mere sequelæ and concomitants? or were the whole series of pathological changes due to some abnormality of the blood-making organs or processes? or did the case present two different diseases, each independent of the other? The increased number of white corpuscles, the enlarged thymus gland and supra-renal capsules, and perhaps the enlarged lymphatics about the neck, all belong to leucocythæmia.

Drs. L. Damainville, W. H. B. Post, C. F. Roberts, and Albert Strang have received appointments as Sanitary Inspectors for the Board of Health in New York.