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HORNY GROWTHS OF THE EAR AND KELOIDS OF THE LOBULE OF THE EAR.

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(Services of DR. A. W. DEROALES.)

ILLUSTRATED.

The cases I report are of interest to the profession. Horny growths, on account of the few cases found in medical literature and keloids on account of the frequency with which they are met by the busy practitioner of the South, are of especial interest on account of the fact that they frequently occur after removal, the recurrent tumors occasionally assuming a malignant type, especially after repeated operations of excision have been instituted. In the preparation of this paper, I have searched dilligently the literature at my command and drawn largely on the articles coming under my observation.

OBSERVATION No. 1. April 17, 1897, J. S., white, male, aged 73, native of Germany, cabinet maker, ten years a resident of this city, presented himself at the Eye, Ear,

Nose and Throat Hospital with a growth on his right ear which he desired treated. He was of a superstitious disposition and objected to the use of a cutting instrument. A little persuasion induced the old gentleman to reconsider, so the day for operation was appointed. Patient was semi-intelligent but claimed he had never been sick.

Horny Growth, Right Auricle, W. M., Age 73.

General health was good, no family history of any deformity or abnormal growth. First noticed growth about two years ago which has increased gradually. Could recall no injury but thought, at first, it was what he termed "a courage bump." Has never suffered any inconvenience from the growth but desired its removal for its cosmetic effect. It was located as shown in the accompanying

photograph, on the superior half of the antihelix of the right auricle and was $2\frac{7}{8}$ centimeters in length, extending upward and backward to the edge of the helix, $2\frac{1}{2}$ centimetres in circumference at the base and $1\frac{1}{2}$ centimetres at the apex. The vertical diameter at the base was one centimetre and the horizontal diameter was $\frac{5}{8}$ of a centimeter. You will observe from the illustration that the horn curved slightly above the

Section Horny Growth. Low Power ($\frac{2}{3}$) Showing General View of Structure.

ear. The weight of the growth, after removal, was eight decigrammes. Base of implantation was not inflamed, neither was there any pain on manipulation. The base presented a somewhat of a flattened appearance and the contour was similar to that of a horn of a Jersey bull. Through the courtesy of Prof deRoaldes, and, at that time his chief of clinic and assistant Dr. C. J. Landfried, I removed this growth, in the presence of the Polyclinic

class on the 20th day of April, 1897, by an elliptical incision deep into the tissue after which the edges were as nearly approximated as possible with two sutures over which was placed an ordinary antiseptic dressing and held in place by collodion cantharides. Parts healed nicely and patient was discharged after the fourteenth day, having only a slight cicatrix to mark the place of this unsightly growth. Twelve months after operation there was no sign of return of the growth. Throughout its entire

Section Horny Growth. High Power ($\frac{1}{5}$) Showing Detailed Structure of Columns of Cells.

course this tumor presented a moderately smooth surface, with three slightly elevated ridges and well marked furrows on anterior quadrants while the posterior quadrants exhibited a striated surface. The striæ were perfectly straight while the ridges and furrows were distinctly wedge shaped. The horn was of mahogany color with a uniform hardness, though slightly compressible, from base to apex.

Microscopical examination showed it to be composed of flat epithelium resembling large epithelial scales usually

found in the epidermis. At periphery cells were horny and did not take stain well. Whole specimen was made up of columns of cells forming rings on transverse section and separated from each other by fibrous tissue. In some parts of specimen these columns had become horny and did not take stain well, appearing in field as large areas having a yellowish color. Under high power these columns resemble the cell-nest of epithelioma, as the section was transverse to the horn. No blood vessels or nerves were observed.

OBSERVATION No. 2. While engaged in general practice at Columbia, Ala., W. H., white, male, aged 38, large, strong farmer, consulted me during 1893 for a growth on his left ear. This growth was about half the size of the foregoing one, located on the antihelix, posterior fossa. It was of traumatic origin and while comparatively hard, could be easily compressed, was of a dark-brown appearance and caused a great deal of inconvenience as patient was continually picking at it. I prescribed a simple sulphur ointment for local application, with a view of relieving the irritation and requested him to see me again in three weeks. Shortly after this, while returning from his work one evening, he was struck on this growth by the rebounding of a small branch of a tree, from which he suffered the most excruciating pain for several hours. The ear was very much swollen and five days later he awoke one morning and found tumor detached, save a few fragments which were promptly severed with a razor. This was the statement made by patient for when I saw him six months later there was not the slightest sign of the growth and there had been no return three years subsequent.

OBSERVATION No. 3. I am informed by Dr. deRoaldes that, while House Surgeon Charity Hospital he had occasion to see in the colored outdoor consultation a light mulatto over fifty years of age who presented a horny growth of somewhat similar appearance to the case reported by Cooseman. The patient disappeared from observation, never reporting after first examination.

OBSERVATION No 4. (By Cooseman.) I take special pride in reproducing the article by Dr. M. E. Cooseman, taken from the Transactions of the International Congress

of Otology, at Florence, 1895. I am indebted to Dr. Homer J. Dupuy for the translation and to Dr deRoaldes for the use of the photograph and the plaster paris model, illustrating this observation, presented him by his friend, Dr. Cooseman, while attending the Congress.

The 18 of February, 1895, a farmer, aged 71, consulted me, requesting me to remove "a button" which he carried on his right ear.

Horny Growth, Auricle, Cooseman,

HISTORY. General health good, no family history of a similar growth. Patient was never sick. This affection began about one year ago, by a slight induration which the patient scratched off with his finger nails seven differ-

ent times. A slight hemorrhage resulted from each procedure. One month after removal of the induration by this manipulation the growth recurred.

DESCRIPTION OF TUMOR. It is located on the superior half of the antihelix of the right auricle. Total vertical diameter 15 mm., circumference 45 mm., diameter of about 15 mm. Base is slightly wider than apex. Apex somewhat sharper and curved beneath the helix. It has a woody consistence. The surface of the tumor is striated in its vertical diameter. These striæ run up to the apex producing on its free surface slight inequalities. Color, dirty brown, darker toward the base. Line of demarcation is well marked between healthy surrounding skin and excrescence. Base of implantation on the skin is neither inflamed nor indurated. There is no spontaneous pain. Pressure by the finger, or inclination of patient's head toward right side, renders tumor more or less sensitive.

TREATMENT. Tumor was removed on August 7, 1895. I extracted it from the base, which I scraped energetically with a sharp curette, then cauterized with the thermocautery. Cure was complete on August 30, 1895. On the site of former tumor nothing but a smooth, elastic, superficial cicatrix remained.

MICROSCOPICAL EXAMINATION. You will first remark that base of tumor is uneven—mammelated—presenting ridges and furrows. There are corresponding inequalities on the cutaneous surface. In inferior part cells of the Malphigian bodies are intact and circular and have a nucleus in the centre. In ascending toward the apex cells become more and more flattened, the nucleus increases in length until at the summit of the tumor it forms a mere line. Lamellated structure is also to be seen; the lamelle are directed toward the principal axis of tumor and are in juxtaposition the one to the other, without any connective tissue substance intervening. Some of the lamelle are perfectly straight, others curved and wedged the one in the other. In the centre of the tumor the cells have disappeared, the nuclei only remaining, at the apex even the nuclei have disappeared. No blood vessels or nerves are to be seen.

CONCLUSION. We are dealing here with a horny growth made up of epidermal cells agglomerated together which

have taken a perpendicular instead of a horizontal course.

REMARKS—Horny growths, while observed at all times, are nevertheless of rare occurrence. They excited the wonder of the ancients to such a degree that they attributed to individuals afflicted with such growths special power of a supernatural and even a divine order. The statutes of Jupiter Ammon and the Satyres prove the truth of this assertion. Horace has even written a satire on this subject insinuating that the disease should be called the disease of Campania, as it was pretty common in this region. The first serious observation of a case was made by Lamfranc, he says in substance: "A man consulted me who presented in several places on his head seven excrescences, some longer than others, as large and as pointed as the horns of a deer (stag). There were no ulcerations of the skin. I considered a cure impossible." Among later authors two opinions prevailed as to the origin and nature of such growths. Malphigi and Morgagni from a study of the anatomical character of the growth hold that these horny growths are prolongations of the dermal papillæ. These dermal papillæ are surrounded by epidermal tissue which masses up like a wall and completely encircles the former structure. During the period of growth of the individual these dermal papillæ and epidermal tissue wedge into each other, intermingling thoroughly, finally taking the form of a hard body. Cruveilhier also inclined to this opinion. On the other side, John Hunter and Horne were the first to recognize that these growths can follow encysted tumors of the skin, and Meckel says that they originate in this manner, even when they have been preceded by a wound of the skin. Virchow ended the discussion and settled the question by stating that if, even from the observations made by Bartholin to those of Wilson and Burns we must admit the possibility of horny growths originating from encysted tumors, it is nevertheless certain that in the majority of cases these growths are simply cutaneous productions. Krause was the first to examine the histological structure of these horny growths and regarded them as epidermal productions in which the horny layers assume a perpendicular direction and in this manner give origin to tumor formations. Rokitansky and Vogel held

the same opinion. The latter macerated these growths in a solution of caustic potash and he thus ascertained that they were broken up and separated into small scales. Wilson compared the horny growth to the finger nails. Simon thought he found canaliculi; filled with marrow. But Virchow demonstrated that this so-called marrow was nothing else but horny structure compressed together. Virchow also showed that the body of the cutaneous horn contained neither nerves nor blood vessels. If these structures are found in those sections cut from the base of the tumor this is due entirely to the penetration of the dermal papillæ into a higher portion of the tumor. This is just what occurs in the derma. Lebert, Duhring, Kaposi, Brocq, etc., considers horny growths to be a vertical hyperplasia of the horny layers of the epidermis. These growths can originate from any surface of the skin but show a predilection for the cutaneous region of the head. This tumor is generally simple, but several may be observed on the same individual at the same time. Botge reports two cases, one a man of 60 with horny growths; four on the nose, two on the left cheek. The other case of a girl 17, who at the age of 2, had a very extensive eruption followed by the appearance of multiple productions resembling warts. The lower portion of the body, from the iliac crest, was studded here and there, with such growths. Along a line corresponding to Poupart's ligament these growths were especially numerous, the whole surface being completely studded by them—and they moreover had a symmetrical distribution. A growth measuring 15 centimetres was located near the umbilicus, and there was also another growth of similar dimensions near the right labia majora. Pick publishes a case 22 years of age with a horny growth on the penis which covered the whole circumference of the junction of the prepuce and glands penis.

[I saw a similar case, 1890, in a young man 20 years of age. The glans penis was amputated in order to get rid of the growth, and when the patient was last seen, five years later, the stump was perfectly healthy and showed no sign of recurrence.]

Horny growths of the auricle. This growth is seldom to be found on the auricle. Politzer does not record a

case in his practice, in fact he never saw a case. Buck, Burnett, McBride and Pomeroy each report cases.

OBSERVATION No. 5. Julia W., full colored female, aged 23, native of Louisiana, servant, was admitted to the clinic February 14, 1897, with a keloid of the right lobule. Family history was good and she presented the appearance of an exceptionally healthy woman. She is the

Keloid Lobule, Right Ear, C. E., Age 23.

mother of one child four years old. No history of keloid among five sisters and four brothers, but her mother had small keloids on both lobules, which never grew larger than a cherry, disappearing about the climacteric period. First noticed the growths seven years ago, shortly after piercing the lobules and wearing ear rings. They grew slowly until they were the size of a bird's egg. One year ago

she was operated upon by Dr. Carter of Nacthitochs Parish. There was not the slightest sign of recurrence on the left ear while it reappeared before the right ear had completely united and continued to grow until it was as large as a hen's egg. It was large, spheroidal, occupying the entire position of the lobule, looking like a large overgrown lobule. It presented a hard surface, smooth, nodule and as deeply pigmented as the surrounding

Section of Keloid. Lower Power ($\frac{2}{3}$) Showing General View of Tissue.

healthy skin. By order of Dr. deRoaldes she was hospitalized, preparatory to being operated upon. She objected to being operated upon with cocain anæsthesia, having already been operated upon for removal of keloids under chloroform and was afraid to have any cutting done "unless she was asleep." Anaesthetic was administered, the following day, without any unpleasant developments. The operator, Dr. Augustus McShane, first assistant surgeon, marked a

line of incision on her black skin with a scapel, about $\frac{1}{2}$ of an inch from the edge of the keloid, and even a little further where the growth seemed to be sending slender processes of new tissue as an invading vanguard. On account of the size of the mass and the loss of healthy tissue from the previous operation, it was necessary to sacrifice as little of the latter as possible. At best it was evident that even the most conservative operation would

Section of Keloid. High Power ($\frac{1}{5}$) Showing Fibrous Tissues.

inevitably leave a considerable surface uncovered by epidermis when the edges of the wound would be brought together after the removal of the growth. The operation, though a simple one, was somewhat prolonged on account of the desire to save as much healthy tissue as possible, and also on account of the remarkable hemorrhage from the numerous hypertrophied vessels supplying the growth. The lobule had been completely excised at the previous operation. The tumor was removed entirely, leaving at first a very large surface for healing by granulation; but

when the edges were brought together, slight force being used, the exposed surface was reduced to a minimum, leaving a "strip-like" raw surface not more than $\frac{1}{4}$ inch in length and half that width. The cartilage of the ear was cut through and exposed, but was covered when the wound was sutured. Before closing the wound, all bleeding points were cauterized with the thermocautery. The approximated edges healed by first intention and the granulating surface within three weeks. Patient was seen a few days ago. the ear, save the loss of the tissue, presented a perfectly healthy appearance; nothing but a smooth, elastic cicatrix marking the place of the former keloid. The growth removed weighed 18 grammes.

Microscopically, a section of the keloid presented a horny layer of epidermis, resting upon the cutis vera. In the neoplasm proper, a large quantity of roundish and spindle shaped and stellate cells were found, which anastomosed with one another and were separated by an abundant homogeneous or finally striated intercellular substance. Nuclear elements were scattered through the fibrous tissue, which were apparently inflammatory for they did not alter the tissue in any way, merely lying in the spaces. The hyaline bands of fibrous tissue took the stain well, but had no definite structure.

OBSERVATION NO. 6. L. H., colored female, servant, age 21. Keloid appeared on left ear at fifteen years of age, about ten months after piercing lobules for ear rings. Tumors grew rapidly to the size of a guinea egg; was operated upon five years ago at Charity Hospital by Dr. Cochram. Growth reappeared three years later and is now about the size of the original keloid. Has previously worn brass ear rings. No history of keloids among other members of family. Patient complains of occasional slight pain in region of tumor.*

OBSERVATION No. 7. L. C., colored female, servant, age 20, has keloid of both lobules about the size of an English walnut; on right ear, and half that size on left ear. Lobules pierced at nine years of age and brass ear rings worn.*

Tumor first observed on right ear, about five years ago, and the left ear several months later. Two years ago applied a horse hair constrictor which resulted in no good

but acted as an irritant and brought about a renewed growth of the tumors. No history of keloids among other members of the family—mother, two brothers and three sisters living and enjoying perfect health.

OBSERVATION No. 8. W. W., colored male, laborer, age 14, healthy, weight 105 pounds. Has large pendulous keloid on right lobule, resembling a tomato with a nodulated surface. Ear was pierced at six years of age on advice of some superstitious friend to cure sore eyes. Growth appeared two years ago and has been growing quite rapidly of late. Both parents, two brothers and three sisters living. No history of keloids for three generations. We find a slight trace of Indian blood in this patient and he is the only exception to the full blooded negroes I have seen among the colored race. He is fully $\frac{7}{8}$ colored.*

I have made a careful research of the records of the hospital and find among the first 43,000 patients visiting the clinic 29,524 white and 13,476 colored. Of these 21,637 males and 21,363 females; 7925 were under 10 years of age and 35,075 over 15. Among these we find 35 keloids, 3 of whom are white and 32 colored. Two of the whites are males, one under 10 and the other between 10 and 20. The only female, white, was 17. Six of the colored were males, one between 10 and 20, four between 21 and 30 and one more than 40 years of age. Of the 26 colored females, three are under 10, twelve between 11 and 20, eight from 21 to 30, three from 41 to 50 years of age. From this you can judge the relative frequency of keloids among the white and colored races. A few of these were mulattoes, but a large majority were full black. All these coming under my observation gave the history of the "usual ear ring," and I feel safe in saying without fear of successful contradiction, that, with four exceptions, including the two white males and two of the colored males, and these may have been from some irritation though no history of piercing, ear ring or injury, the traumatism existed in the 35 cases. Admitting the four cases to be spontaneous, we have a relative ratio of less than 9 per cent. springing spontaneously against 91 per cent. from traumatism.

*Observations 6, 7 and 8 were made after the meeting of the Louisiana State Medical Association. They were patients at the Eye, Ear, Nose and Throat Hospital during June and July and I should have stated that they were enjoying perfect health. I operated each of them with the usual V shaped incision, removing a portion of the cartilage. All made satisfactory recoveries and as yet no sign of return of the growths. (Aug. 1, 1898.)

In a communication read before the International Congress of Otolaryngology at Florence, 1895, Dr. deRoaldes said: "Most observers who, like Turnbull, Tiffany, Gregory, Knapp, Briggs, Yandall and many others have mentioned the frequency of keloids in the negro race—have also reported so many recurrences after extirpation, that most surgeons refrain from removing keloids, more especially at the age of physical development and growth. There is a connection to be established between the post-operative reproduction of these tumors in the negro and those so familiar, viz.: naso-pharyngeal polypi. I have operated again and again on keloids with the knife, followed by the use of the thermo-cautery, the latter having sometimes a modifying influence of some sort over the growth. Within the last few years I can but praise the use of electrolysis as an adjunct in the bloody extirpation of keloids.

My hospital records show three cases of keloid not originating from traumatism or piercing of the ears. Are these spontaneous tumors or must we suspect traumatic irritation so slight as to pass unnoticed?"

Knapp relates several cases originating in places in which the ears were pierced and says that "tumors are so seldom met with after the ears have been pierced, that some authors, for instance, Lawrence Turnbull, are not inclined to take them as a consequence of the injury alone, but let a peculiar condition of the system, especially scrofulous or galvanic action of the alloyed metals of the ear ring, play a part in their production."

Bullard, Burnett, Dench, Field, Hovell, McBride, Pomeroy, St. John Roosa, Sutton, Taylor and others relate cases among the colored race and without a single exception attribute the cause to piercing and wearing ear rings, at the same time claiming that they are frequently met with among the colored races and seldom among the Caucasians.

Agnew, Barr, Gruber, Pritchard, Shields, Wilde and others report keloids and while accepting the traumatic theory make no distinction between the relative frequency among the different colors. Trumbull and Bliss in foot note of *Annual of Universal Science*, Sajous, 1896, says, "Tumors of the lobe are as infrequent in the negro as in the white race, but frequently in the mixed races, especially the mulatto."

Some author states that fibroma of the lobule occurs more frequently in colored than white and think the reason of it is that the poor negroes have to use ear rings of commoner and heavier material than their more fortunate rivals.

Dr. Senn, of Chicago, in his excellent work on "Pathology and Surgical Treatment of Tumors, page 382, says:

"Keloid resemble clinically some of the granulomata, and under the microscope it is a compromise between a fibroma and a sarcoma. Its frequent occurrence in tubercular scars resulting from small punctured wounds has led the writer to suspect that it might represent a particular form of tubercular inflammation. We are, however, not in a position to prove its tubercular origin, and nature, and its clinical behavior would certainly tend to negative the idea that it is a form of sarcoma. For the present we must include it among the fibromata, although strongly inclined to believe that before long it will have to be classified with the infective swellings. The colored race is particularly predisposed to keloid. The sting of an insect, the prick of a needle, or a small abrasion frequently acts as the exciting cause. Keloid sometimes affects different parts of the body at the same time, but always develops in a scar, which may be so small as to elude detection. The tumor slowly increases in size up to a certain point, and after having remained stationary for from 10 to 20 years they slowly disappear—one of the strongest proofs that it is not a true tumor. The keloid tissue is characterized by its great vascularity as compared with other fibromatous tumors and by the existence of numerous connective tissue space lined with endothelial cells. The inflammatory parts of a keloid is shown by the numerous leucocytes in the vascular spaces. From the structure of a keloid it would be reasonable to assume that occasionally it is transformed into a sarcoma. The benign clinical aspect of a keloid render it easy to distinguish between it and a malignant tumor of the scar-tissue."

All authors agree that unless thoroughly removed the tumor is sure to return. If the growth is in the lobule a V shaped incision may be made with a sharp scalpel and the wounds closed with sutures. It frequently becomes necessary to take a portion of the cartilage in order to completely remove the keloid. Newton in N. Y. Weekly Journal, March 20, 1897, folio 380, reports two cases of keloid successfully treated with thiosinamin. This remedy, though new, judging from what he says, is worthy of favorable consideration.

To Dr. O. L. Pothier I am under obligations for the microscopical examinations and the photo-micrographs illustrating this paper.

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