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ORIGINAL ARTICLES.

TUBERCULOSIS CUTIS VERRUCOSA.

Read in the Section on Dermatology, at the Thirty-Ninth Annual Meeting of the American Medical Association, May, 1888.

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The discovery of the tubercle bacillus by Koch and the incontestable proof furnished by experimental inoculation that it was the cause of pulmonary tuberculosis, has acted as a powerful incentive to the study of disease from a bacteriological standpoint of view, and, leading to the study anew of many affections hitherto considered as of unknown origin or doubtful nature, has allowed many of them to be established upon a firm basis. One of the most important results of this method of study has been the discovery that affections, previously considered separate and distinct one from the other, were in reality only clinical manifestations of the same disease; that is, they were due to the same cause—a fact which was most brilliantly seen in tuberculosis as it occurs in the skin. In this organ of the body, the most varying clinical phenomena have been found to be dependent upon the presence of a bacillus, morphologically and in its effects identical with that one found in tuberculosis of the pulmonary or abdominal viscera, or of the bones, etc., and the constancy of its presence has not only identified these cutaneous processes with tuberculosis in general, but has also served to demonstrate the bond which unites them one to the other.

The forms in which tubercular disease of the skin manifests itself are clinically so different, that we may be allowed to review them briefly. Among them should be mentioned those ulcerations which occur in the latter months of general tuberculosis, and which are situated most usually in the neighborhood of the orifices clothed with mucous membrane. The rarest of the forms of tuberculosis cutis, they originate primarily as a red, dry and hard papule, which undergoes caseous or purulent degeneration, softens and, breaking down or being scratched, becomes an ulcer. It may also develop secondarily through inoculation of a small cut or scratch, or slight wound. In either case, the ulcer, once formed, runs a very

slow chronic course and never heals spontaneously.

Lupus in all its forms has also come to be accepted as clinical manifestations of tuberculosis cutis, since Demme¹ first demonstrated the presence of the tubercle bacillus in connection with it. Notwithstanding that, in its symptoms, it is so entirely different from the first mentioned form of this disease of the skin, and also from those to follow, still it corresponds with them pathologically. Besides, there can also be brought forward, in support of the tubercular nature of lupus, the repeated production of tuberculosis by experimental inoculation of a culture of the bacillus obtained from the affected tissues; the large percentage of deaths from tuberculosis of other organs occurring among those afflicted with lupus (Block,² 79 per cent.; Sachs,³ 62.83 per cent.; Bender,⁴ 62.3 per cent.); the frequent development of acute miliary tuberculosis after operative procedures made upon lupus, etc.

The large majority of those cases and of those cutaneous processes situated especially about the neck, which the older dermatologists called scrofula, scrofulous abscesses, serpigenous scrofulides, have also to be ascribed to the same cause as lupus. This form of tuberculosis occurs most usually in children and youths secondarily to tuberculosis of the lymphatic glands or of the bones or joints. When primary, it develops in the subcutaneous connective tissue and represents the so-called cold abscess or the gomme tuberculeux, formerly the gomme scrophuleux, of the French. All of these forms have been often enough demonstrated to be of tubercular nature by many successful inoculations, etc.

Separated from these in the manner in which they are acquired, but still belonging to the same disease and due to the same cause, are those clinical manifestations which can be traced more or less directly to infection from without, and which may be regarded as true "inoculation tuberculosis." In this category many of the so-called anatomical tubercles or verrucæ necrogenicæ are to be placed.^{5,6,7} They occur most commonly upon the

¹ Demme. Berlin Klin. Wochschr., 1883.

² Black. Viertelst. f. Dermat. u. Syph., 1886.

³ Sachs. Ibid.

⁴ Bender. Deutsch. Med. Wochschr., 1886.

⁵ Riehl. Centrbl. f. Chirurgie, 1885.

⁶ Kareg. Ibid. ⁷ Finger. Deutsch. Med. Wochschr., 1888.

hands and fingers of those who have to do with autopsies, anatomical material, etc., appearing as a small red papule, which quickly becomes pustular and then covered with a crust. In the course of a few weeks, if the crust be removed, the lesion is found to have become warty, and between the papillary prolongations small drops of pus may ooze out on pressure. Their growth is slow and they undergo involution in their central portions while enlarging peripherally. The lesions may disappear spontaneously or they may be followed by general tuberculosis.

Closely allied to the just described lesion and differing from it only in minor points is that form of inoculation tuberculosis first described by Riehl and Paltauf,* and to which they gave the name of tuberculosis cutis verrucosa. It is the one which interests us more especially in this paper, since the case to which I would call attention can most properly be regarded as corresponding to those described by them.

According to Riehl and Paltauf, tuberculosis cutis verrucosa occurs usually in healthy adults, who by occupation are continually in contact with domestic animals and animal products—as butchers, cooks, etc. It is observed most frequently on the dorsum of one or both hands, or of the fingers, or in the interdigital spaces, but seldom on the palmar surfaces or on the wrists. The lesion resembles somewhat a group of irritated warts or a lupus verrucosus, and varies in size from a pea to a silver dollar. They are round or oval, but may coalesce together and then have a serpiginous appearance. Each plaque is surrounded by a narrow erythematous zone, on which there may be small superficial pustules or crusts. The central portions are elevated and warty, and pressure causes the appearance of drops of pus, which well up from between the papillary outgrowths. Involution of the plaques takes place spontaneously, but it may be months or even years before it begins.

Microscopically it was found, that the appendages of the skin were unimplicated in the process, but that the morbid changes, which were those belonging to tuberculosis in general, were situated in the papillae and in the upper portion of the cutis. Tubercle bacilli were quite abundant. The pus was found to proceed from subepidermal miliary abscesses, which did not contain any tubercle bacilli, but staphylococci.

The following case, which has been under my care, seems to me to agree so accurately with the description of tuberculosis cutis verrucosa, that I would record it as an example of that form of disease, due to the inoculation of the tubercle bacillus, notwithstanding that the source from which that bacillus was derived was not the same as was observed in the cases reported by Riehl and Paltauf.

M. F., a female, aged 70, a native of Ireland, presented herself at my clinic at the Demilt Dispensary on March 20, 1888. She is a widow, in good general health and looks younger than she really is. She has never had any disease of the skin before. Her husband died some years ago from phthisis and since his death three of her children have succumbed to the same disease. A fourth child, a young man, had an attack of pneumonia two years ago, which was followed by phthisis, for which he has been under treatment at the Dispensary. When examined, it was found that there was infiltration of the apex of right lung and formation of cavity. During his illness, and also subsequently, his mother had nursed him and washed his linen and the utensils used by him. She states that she first noticed one year ago the inception of the affection on her hands. It began as a small papule on the knuckle of the little finger, and one developed also on the first phalanx of the index finger of the left hand. The papule was round, somewhat elevated, elastic, pale-red in color and slightly squamous. These lesions grew larger and became warty in appearance, new plaques appeared on the dorsum of the hand and enlarging, coalesced together forming a large diffuse patch. The disease began about six months ago on the right hand. The papules appeared first on the knuckle of the little finger and shortly after on the wrist. Its extension took place in the same manner as it had on the left hand.

On examination, it was found that the primary lesion on the knuckle of the little finger was as large as a twenty-five cent piece and that involution had begun in the centre. There was still a slightly warty appearance there, but it had sunk in to a considerable extent. The more peripheral portions were, however, more prominent, warty, and typical. There was a marked increase in the horny epidermis covering the majority of the lesion, which was pale red in color and bounded by a narrow red halo. Pus, however, did not well up on pressure. Along the ulnar border of the hand, a number of separate discrete lesions the size of a pea were found. They were unquestionably of recent origin and they showed to a marked degree the warty and other characteristics given by Riehl and Paltauf, with the exception that there was an absence of pus. The plaques on the dorsum of the hand, which had become confluent, occupied a considerable space. They now formed a diffuse patch, which beginning about a half inch above the knuckles, extended to the upper border of the carpus, while laterally it reached the ulnar border of the hand, on one side, and on the other was bounded by the metacarpal bone of the index finger. This large plaque was more or less surrounded by a narrow red halo, and its surface was papillomatous and even decidedly fungoid in places. Ulceration was nowhere to be

* Riehl and Paltauf. *Viertschft. f. Dermat. u. Syph.*, 1886.

seen, but lateral pressure caused pus to well up from the base in many points. There were also numerous small crusts, but any great excess of horny epidermis was not noticed.

On the right hand there was found, on the first phalanx of the index finger, a large oval lesion, but the one on the knuckle of the little finger had disappeared, leaving a superficial cicatrix. A large diffuse plaque occupied the dorsum of the hand from about midway upwards to the wrist, around the ulnar side of which a number of small discrete lesions curved, forming a more or less serpiginous line. On the wrist a glistening white superficial cicatrix was seen, the site of the primary plaque, which had undergone complete involution. The general features of the lesions and plaques on the right hand were the same as were observed on the left. Here and there in the large diffuse patches on the backs of both hands there were found portions undergoing, or which had undergone involution. On these the papillomatous or warty character had disappeared to be replaced by cicatricial tissue. Nowhere on the red halo surrounding the patches were there any small pustules.

The patient stated that the lesions were at times inflamed and were then quite painful, but for the most part subjective sensations were absent, except a slight itching occasionally. It was, unfortunately, impossible to obtain one of the small primary lesions for microscopical examination, the woman objecting to any one of them being excised, therefore I was obliged to be contented with a small piece from the edge of the large patch on the left hand. This was hardened in absolute alcohol, mounted in celloidin and cut with the microtome. A portion of the sections were stained with borax-carmin, the remainder for tubercle bacilli. In the carmin sections granulation tissue, small tubercles, epithelioid cells, giant-cells, etc., such as characterize tuberculosis, were found. The general features did not correspond exactly to those detailed by Riehl and Paltauf, differing in the much greater prominence of the papillomatous growth, in the lesser amount of horny accumulation covering it, and in the diffuse infiltration of the tissue with small round cells. These differences can, however, be explained by the facts that the sections examined were not obtained from a young lesion, but from a patch which had been present for a long time, had been subjected to all kinds of treatment since its first appearance, and had been repeatedly inflamed. Consequently the want of exact correspondence did not invalidate the diagnosis of tuberculosis, one which was further proved by the examination of the sections stained for bacilli. In these tubercle bacilli were found, not, however, very abundantly, only one or two in each section. They were found lying high up in the papillæ and also in the upper portion of the cutis proper, but none in the rete. The

presence of these bacilli thus established the nature of this patient's disease without question, although the diagnosis of tuberculosis cutis was not an impossible one when proper weight to the clinical history and symptoms was given and other cutaneous affections which might have resembled it were excluded. It would seem as though the source from which the disease was acquired was also clear. She attended to her son who had phthisis, washing the linen and utensils which had been used by him, and a perfectly just supposition is, that she was inoculated by tuberculous sputa, or matter containing tubercle bacilli. In women of her class there is not found that attention to the hands, either in regard to cleansing or avoidance of small cuts or scratches which might be desired, and the probability is that some of these latter furnished the point of ingress to the microorganisms.

The primary lesions, that is, the small discrete ones along the ulnar border of the left hand and elsewhere, agreed clinically in every way with the description given by Riehl and Paltauf, with the exception that there was absence of the miliary abscesses mentioned by them. They are not, however, of great consequence, being only the result of secondary infection, and at any rate they were present in the older plaques. The very marked papillomatous character of these latter situated on the dorsum of both hands, cannot be said to belong to the process directly, but its development should be ascribed to the repeated inflammatory attacks to which these patches were subjected.

At the beginning of this paper it will have been noticed that the statement was made, that the so-called anatomical tubercle was very closely allied to the tuberculosis cutis verrucosa of Riehl and Paltauf. There do not, in fact, seem to be any material reasons why a distinction should be made between them. They certainly agree in their causation, while in the life history, the symptoms characterizing the lesions and the anatomical changes found in each, there is a virtual agreement. The only difference between them seems to be in the source of the material causing them, but that is such a minor point that it would, unquestionably be better, and it would simplify nomenclature, if they were both included under the same name as representatives of inoculation tuberculosis of the skin; which, in fact, has lately been done by Finger.

The diagnosis of this inoculation tuberculosis may at times be difficult. Still if full value be given to the general history of the patient, the course of the individual lesions, and aid be obtained also from the microscope and from differential diagnosis, the obscurity which might surround a case may be easily cleared up.

Owing to its verrucous character, the disease certainly resembles several other cutaneous affec-

tions, among which may be mentioned lupus papillaris, which very frequently is found on the extremities and hands. This form of tubercular disease—that is, lupus—begins most frequently early in life and its primary lesions are small brownish tubercles deposited in the skin. After these small nodules have undergone degeneration, broken down, and an ulcer has formed, then from this as a base the papillary proliferation shoots up and the verrucous form of lupus is established. As has been mentioned, no ulceration ever occurs in the inoculation tuberculosis under consideration, the primary lesion arising from normal unbroken skin. Relapses likewise never take place in the cicatrices, as is the case in lupus.

The ordinary inflammatory papillomata are likewise easy of recognition from their localization, their acute course, the absence of cicatricial involution occurring spontaneously, and by the history and symptoms of the disease which preceded their development. The so-called frambæsia syphilitica differs also from the tuberculosis verrucosa cutis in that it always develops from an ulcer, which has the peculiar indurated base of specific lesions. It is surrounded by a sharply defined zone of infiltration, and either in the vicinity are some characteristic ulcerations, or here and there on the body there may be found evidences of previous or existing syphilis.

On the backs of the hands, the papillary form of epithelioma is not infrequently met with. It originates, however, from a preexisting wart or from an ulcer; its base is indurated and it undergoes ulcerative metamorphosis, all of which are absent in the form of tuberculosis under consideration.

It is scarcely necessary to continue further the question of differential diagnosis, since in any doubtful case recourse should be had to the microscope, which will readily solve the question; but a few words in regard to treatment are advisable.

All that there is to be said of this is comprised under the term mechanical. The small plaques should be excised in toto, while the larger ones may be scraped out with Volkman's sharp spoon or destroyed by means of a Paquelin cautery. Thorough and complete destruction of the disease is the important point, and the choice of remedies should always be made with a view to that end.

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SCARLET FEVER prevails to such an extent in Holland, Mich., that the Board of Health has ordered the Sunday-schools to be discontinued.—*Chicago Evening Journal*

THE membership of the Association must be increased for the general welfare.

A CASE OF ATROPHY OF THE SUPERCILIA AND CILIA, ASSOCIATED WITH ATROPHY OF ALL THE FINGER-NAILS, OF CONGENITAL ORIGIN.

Read in the Section on Ophthalmology, at the Thirty-ninth Annual Meeting of the American Medical Association, May 9, 1888.

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G. H., æt. 17, father and mother living, several other children. Patient came complaining of difficulty in using her eyes. There was a large amount of photophobia, considerable blepharitis and some conjunctivitis, the two eyes being about equally affected. There was no entropion, but the upper lids were considerably swollen and there were practically no cilia on the lower lids, about three or four, stunted in growth on each under lid. On the upper lids the cilia were more abundant, but still there were few in number and stunted in growth. The supercilia presented, however, the most striking features. They were so short and stubby on both sides, especially towards the temporal region, that I could not be persuaded that she had not burned them either intentionally or accidentally. Whilst I was examining her, the Sister Superior of the institution came in the room and at once observing the supercilia exclaimed, "What made you burn your eyebrows?" To which the girl protested smiling, that she had not done so; that they had always been in that condition.

The hair of the scalp was abundant and black. On examining the finger nails I found a marked condition or what might be called dystrophy of all the nails of both hands. There was not one exception. She assured me that her father's nails are exactly the same as hers, on both hands, and that his eyebrows are similar to hers. I have not had an opportunity of seeing her father to verify her statement in this regard; on further inquiry she told me that she had two brothers similarly affected. I visited her home and found a little brother about two years old. All his nails were as nearly like the nails of my patient as it was possible for the nails of a child of two years to be like one of seventeen years. The cilia and supercilia were also exactly similar to those of his sister. On the lower lid there were three or four cilia, and those stunted in growth, and the supercilia had the same burnt-off appearance, only the phenomenon was not so striking as the little one had light hair and light supercilia, whilst my patient had dark hair and dark supercilia.

I have examined the cilia and supercilia under the microscope and have brought a slide with me so that those who wish to examine them may have the opportunity. There is a marked deficiency in the epithelium of the hair both in the shaft and the root. Both show a marked dystrophic condition. It would seem as though the