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GRANULOMA ANNULARE.

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In 1893 I read before the American Dermatological Association, at their annual meeting at Milwaukee, a paper on "Lupus Erythematosus as an Imitator,"* and gave as an example of its sometimes imitating Lichen planus a case which subsequent experience of like cases has led me to believe belongs to a special type of disease midway between an inflammation and a neoplasm, both in its clinical and pathological features. Although some of the cases have been previously published, I repeat them here for convenience of future reference.

Case I.—Personal.—Alexander T., aged 20, photographer, came first to University College Hospital as an out-patient on May 25th, 1892. The disease for which he sought advice, began when he was in good health, four years previously, on the right wrist and on the extensor aspect of the root of the thumb. The first lesions were two split-pea sized slightly raised flat nodules of a pale red colour, which were accompanied by slight itching. They increased very slightly in size and number, fresh papules appearing on the back of the right wrist and on the right and left forefingers and on the back of the left hand. Those on the head, he thinks, came about the same time. Those on the back of the wrist coalesced into patches. During the last two years fresh patches have appeared on the left middle finger,

* Published in the *American Journal of Cut. and Gen.-Urin. Dis.*, Vol. XII., 1894, p. 1, with a coloured illustration of the case in question. Reproduced in my "Atlas of Skin Diseases," Plate LXVII., Figs. 1 and 2.

on the first and terminal phalanges, and over the fifth left metacarpal bone. There were lesions also present on the nape, over both mastoid processes, on the right ear, the right inner canthus, and just below the right lower jaw.

They formed patches evidently made up of aggregations of papules of a violaceous red tint, exactly like that of lichen planus, but very finely scaly; the patches had undergone involution in the centre; the smaller patches thus formed circles of coalescent papules with a depressed centre; the larger patches had apparently gone a step farther and formed irregular gyrate patches, with part of their border completely involuted. All the patches had a narrow bright red areola and spread at the border; the nape lesions were still discrete, of a bright red, and formed two irregular groups of four papules each, with a single papule below them. The head lesions were, for the most part, round the scalp at the hairy border. Behind the left ear, there was only the trace of a patch of a yellowish tint, to be more clearly felt than seen, the centre having involuted. Behind the right ear the patch was larger, but faint and of a yellowish hue. There was another yellowish patch just within the border of the hair on the left side, and another over the right temple. At the right inner canthus the nodule was only just perceptible, almost the colour of the normal skin. There was a colourless nodule in the centre of the ear in the front of the helix. These yellowish patches were very suggestive of Lupus erythematosus.

The patient was a thin but fairly well-developed man, not strong, subject to a cough in the winter, but he presented no signs of phthisis. His father and mother were alive and well. His five sisters and one brother have all weak chests, but none of them have died of phthisis, and he is not aware of its being in the family.

He was taken into the hospital, and some of the patches on the right wrist excised, and also the isolated nodules at the nape. The wrist specimens were lost, but the nape lesions were examined microscopically, and the result will be given presently.

Case II.—Personal.—Plate I., Figure I.—George H., aged 21, was first seen at University College Hospital in August, 1894. He has had many ordinary warts for about two years. On the left thumb were fourteen which he had destroyed with nitric acid. There were still, when I first saw him, three together on the inner surface of the

right thumb, and one on the back of the right hand. The lesions to be described have also been present two years. They began first on the back of the right hand over the space between the first and second metacarpal bones. He described it as having looked like a "mattery head," on which a scab formed the size of a pin's head; this was picked off, and a little hole exposed. It healed, but projected, and then began to spread. When I saw him first there was a gyrate patch nine-eighths of an inch by six-eighths, with a border one-quarter of an inch across, which projected an eighth of an inch. The raised border was of a yellowish-white tint with a narrow red areola, while the centre, where the growth had involuted, was depressed to the level of the normal skin, but was of a slightly reddened hue.

At the root of the thumb was a small patch which he said was going away. There was there a patch, half an inch wide (with only four papules left, three of which touch), like the border of the large patch. There was here also faint redness inside where involution had taken place. Above the wrist there was an annular patch with the border made up of hemp-seed sized papules. There were a few fine vessels over the border, and with a lens fine lines could be seen radiating from the raised border like slight puckering.

One inch above the large patch there was a red spot one-eighth of an inch in diameter, but not raised, which he thought was the commencement of a new lesion like the wrist-patch, which did not begin as a "mattery head," while the other two did. The large patch had not spread during the last two or three months.

On the nape, just below the hair-border, there was a red papule, the size of a large hempseed, made up of thickenings round a group of four hair-follicles; the three smaller have hairs still in them; the fourth is a little larger and has a pin's point scab on it which, when picked off, left a small hole with raised borders.

As regards family history, the father and mother were still alive, but one brother had died of phthisis, aged 21. The patient showed no sign of ill-health.

CASE III.—By Dr. PRINGLE.*—In October, 1899, this case was brought to the Dermatological Society of London for diagnosis. The patient was a German lad, aged 18, a clockmaker, who presented

* *Brit. Journ. of Derm.*, Vol. XI., 1899, p. 435. His reference to the case in my "Atlas" is put Plate LXVII., Figs. 3 and 4; it should be Figs. 1 and 2.

lesions of an unusual type upon the neck, face, scalp and back of the right wrist. He was in excellent general health; his family history was good, no members of the family, nor anyone else known to him, having suffered from an affection similar to his.

The principal lesion was situated on the left side of the neck, immediately behind the sterno-mastoid muscle at the level of the second cervical vertebra. It was roughly circular in outline, and measured three-fourths of an inch in diameter. It was composed of ten abruptly raised papules or nodules, averaging the size of half a split pea; these were firm to the touch, bright pink in colour, and obtuse at the summit, which was capped with a thick white epidermic scale, their general appearance being distinctly "warty."

The scale could be removed with some considerable difficulty by scraping, but did not penetrate into any dilated ducts. Hairs emerged through the scales at various points, but none were accurately central in position, so that the lesions could not be claimed as "follicular."

The hairs present were also normally firmly adherent. The skin between the nodules was normal in colour, but its natural lines were perhaps somewhat deepened. The skin surrounding the lesion was absolutely natural in every respect, no papules or "lichenification" being present.

Three similar nodules, arranged in a line, existed immediately behind the left angle of the jaw, and half-a-dozen were arranged in crescentic fashion, so as to form a fairly accurate semi-circle behind the angle of the jaw on the right side of the neck. On the back of the right wrist, at the exact level of the lower ends of the radius and ulna, was a horizontal band, three-quarters of an inch in length and about one line in width, made up of very flat papules, angular in outline, pale greyish-pink in colour and shiny on the top, resembling a series of verrucæ planæ, or the warty type of Lichen planus, which so closely simulates them. Over the forehead in both temporal regions, and extending for a distance of about two inches into the scalp, were more than twenty distinctly inflammatory papules, with adherent dry scales and of a warty appearance; these were not arranged in groups, and were quite indiscriminate in distribution. Some were pierced by hairs, others were not. There seemed every probability that these lesions were the first stage of the disease.

The patient stated that the spots appeared on the left side of the neck about eight months ago; that the group there reached its present condition about four months ago, and had since remained unchanged. Meanwhile the other lesions present had gradually developed without ascertainable cause, but also without causing him any trouble, beyond slight disfigurement and occasional itching.

Case IV.—Personal.—Plate I., Figs. 2 & 3.—Jane C., aged 52, charwoman, came to University College Hospital on July 27th, 1900. The disease had been present two months in the form of a lesion, on the ulnar side of the left wrist below the styloid process, about an inch in diameter. It was made up of at least three distinct patches.

The lowest one consisted of six papules of the size of a millet-seed to a large hempseed. They partially coalesced, and the central portion of the patch was depressed below the periphery. Just above the main patch was a lesion which the patient said had only taken three or four days to form. It was of somewhat similar character, but the papules were smaller and less separated. In the major lesion, the patch was crescentic, the inner side involuting and sloping down gradually to the normal skin. The sloping portion was partly papular, but the papules were only the size of a pin's head, whilst the lowest part only looked like thickened skin. On the ulnar border of the palm was a single papule, and between this and the crescentic patch was one which had become absorbed.

There was a solid hempseed-sized papule on the nucha in the middle line about two inches above the seventh cervical vertebra; the centre of the papule was white, like a flat pustule, but it was solid and had a narrow red ring round it.

There was an extremely strong history of phthisis in her family. Her father, mother, sisters, and three out of eleven of her children had died of it. She herself was subject to bronchitis. She was not seen again until October 30th, when the lesion was found to be much changed.

It was longer and less crescentic; the upper portion had a scanty horny adherent crust upon it, and the lower part, about half an inch across, was inflamed since she did her last day's washing, and when a part of the horny crust was taken off a bead of pus exuded.

The nodular character was lost, and the general appearance was suggestive of Lupus verrucosus, but not distinctively so. The papule

on the nape was unchanged, and no fresh ones were discovered. Unna's salicylic and creasote plaster was now ordered, and although used irregularly and intermittently, as it gave great pain, the diseased area, which was much enlarged since she came first, was now (December, 1901) almost well. No material for histological investigation could be obtained.

CASE V.—PERSONAL.—Plate I., Fig. 4.—Master E. S., aged 11, was sent to me by Dr. Barter. He was a healthy boy, but had had sunstroke two years before. There was strong gouty history on the father's side, but the boy had never shown any arthritic symptoms. The lesions for which he was sent to me had been developing for more than a year, but the mother was vague as to the exact time.

The first patch began on the left elbow, then on the right, six months later on the wrists, and in the last few months on the knees.

The first lesion was like a flat wart, which it was supposed to be; it enlarged very slowly and involuted in the centre, but it was some time before it became a ring.

When seen by me there were lesions on the ulnar and radial side of the left wrist, on the tip of each elbow, and on both knees. There were none on the right wrist, on the hands, or on the nape.

The best developed was on the ulnar side of the left wrist, where there was a ring rather larger than a shilling. The centre was a dusky reddish hue and slightly atrophic. The border was raised from one to two millimetres above the normal, and made up of nodules and papules closely aggregated to form an irregularly outlined ring.

The papules varied in size from a large hempseed to a millet-seed, except a double one, which was oval and a third of an inch long.

They were flat at the top, but considerably raised, and with a lens showed minute corrugations; they were white with a sloping pink border, and they were more developed on the anterior than on the posterior border. The ring on the radial side of the wrist was the size of a shilling, the general characters were similar, but the papules of the border were smaller.

On the top of the left elbow there was an irregular ring an inch and a half in diameter. The border had quite involuted on the inner side, and on the outer border for about an inch were millet-seed papules, except one, which was a quarter of an inch and oval.

On the right elbow, there was no ring, but an irregular aggregation an inch in diameter of similar small papules; but the general colour was pale purplish-red, and many of them looked like Lichen planus.

Over the right kneecap, was a much less prominent ring with papular border of purplish colour, so that it looked as if it were going away. On the inner side of the kneecap was a small irregular group of papules, and a single involuted lesion in front. On the left knee there was only the purplish stain of a previous patch just above the kneecap. There was a small common wart on the left palm.

Beiersdorf's mercurial plaster No. 16, was recommended, and Dr. Barter tells me that the patches went away under this treatment.

Case VI.—Mr. George Pernet.—Mr. F., musician, was sent to me by Dr. Daldy, of Surbiton, on August 28th, 1901. I was away on my holiday, and he was seen, for me, by Mr. Pernet, who considered that it belonged to the same category as the previous cases, and made the following notes in my case-book: The lesion was situated over the right metacarpo-phalangeal joint of the index-finger, and formed an irregular, reddened, raised patch about one inch in diameter, made up of nodules the size of a hempseed or a little larger, some of which touched, while others were discrete; they paled on pressure, and some had a slight punctum. The central portion had undergone involution, and the ring at one portion shaded off into the normal skin, where there were no pale nodules left. Beiersdorf's No. 15 mercurial plaster was prescribed. The nape was not examined.

Pathology.—I have microscopically examined a papule from the nape of my first case (Plate II.), and found that the greater part of the papule was made up of a dense mass of cells, the chief portion of which was situated between two hair-follicles, which were, however, partially embraced by the cell-mass. There was very little increase of the horny layer, but the prickle-cell layer was enormously thickened, and in one section it appeared to be prolonged in the course of a sweat-duct. The papillæ were quite obliterated in the central portion, but not at the periphery, where they were broader, but shorter peripherally. Beneath the cell-mass was a sweat-coil showing cell-infiltration round it, but traced upwards it entered the cell-mass, which was almost confined to the superficial part of the corium. At the

side there was a small amount of cell-exudation about some of the hair-follicles away from the main papule, but it was not very marked. The sections were made several years ago, before differential staining to show the nature of the component cells was in vogue. On the whole the structure appeared to me to be that of a granuloma.

There are thus six cases which possess definite characters in common which show that they belong to one clinical group. Summing up these characters, they are as follows :—

Nodules or papules of slow development which tend to form circles by aggregation or partial coalescence, leaving the component nodules still visible. They tend to undergo slow involution, so that the circle is broken and often only a crescent is left, or a gyrate patch where two or more crescents join. The inner or involuted side of the ring slopes down gradually into the normal skin, leaving the part which has been affected slightly reddened for some time; the outer border is more abrupt, but crenate or distinctly nodular, and there may be a very narrow areola. The colour of the lesion may be violaceous red, or quite pale, as in Fig. 1. The nodules are firm, and some of them may have a slightly warty character, whilst others are flat and rather suggestive of Lichen planus. The distribution is chiefly on the wrists and backs of the hands and fingers, but also on the neck, and it is curious that in no less than four cases there have been papules on the nape near the hair-line. They have also been seen on the head behind the ears and on the upper part of the face; only in the boy were they on the lower extremity over the knee. They seem to have a preference for bony prominences, such as the knuckles, radial and ulnar extremities, etc., but are not exclusively there. The characters in the case of the boy were not quite so definite as in the others.

In connection with their slightly warty appearance, it will be noted that in two cases there were common warts both as antecedents and concomitants, and that in Case IV. the lesion went on to a condition like Lupus verrucosus; but the histology lends no support to their being of a warty character, the epidermic changes being trifling compared to the copious cell-infiltration of the corium.

Their extreme indolence, both in development and course, indicate that they are no ordinary inflammation, though they have a tendency to involute centrally and extend *pari passu* peripherally.

In two of the cases there was a family history of tuberculosis, but the number is too small to argue from.

I am not aware of any cases in dermatological literature, except that of Pringle, which correspond with this form of disease. I was at first tempted to include Dubreuilh's* case of a chronic circinate eruption of the hand as another example, but the absence of any distinct mention of the rings being composed of more or less distinct nodules and the different histological character of the lesions have made me hesitate to do so. Dr. Dubreuilh himself, while considering that his case approaches nearest to Lupus erythematosus in nosology, identified his case with those of Colcott Fox and Galloway,† which the latter has called Lichen annularis.

These cases also form rings on the hands, but the rings appear to develop from a single papule which enlarges peripherally whilst involuting centrally, and there is no nodular character to be observed, the border being only slightly raised and flat. Galloway's histology also is quite different to mine.

To conclude, we have here an eruption with definite clinical characters in which semi-coalescing indolent nodules tend to form rings or segments of rings situated chiefly on the upper extremities or nape, and which clinically and histologically appears to correspond with the pathological condition we call Granuloma.

EXPLANATION OF PLATE I.

FIGURE 1.—Back of right hand of Case II.
FIGURE 2.—Ulnar side of left wrist of Case IV.
FIGURE 3.—Single papule at nape of neck of Case IV.
FIGURE 4.—Flexor aspect of left wrist of Case V.

* Cas d'Eruption Circinée Chronique de la main. *Annales de Derm. et de Syph.*, Vol. VI., 1895, p. 355.

† Lichen Annularis. *Brit. Journ. Derm.*, Vol. XI., 1899, p. 222. Illustrated. Reproduces Dubreuilh's case.