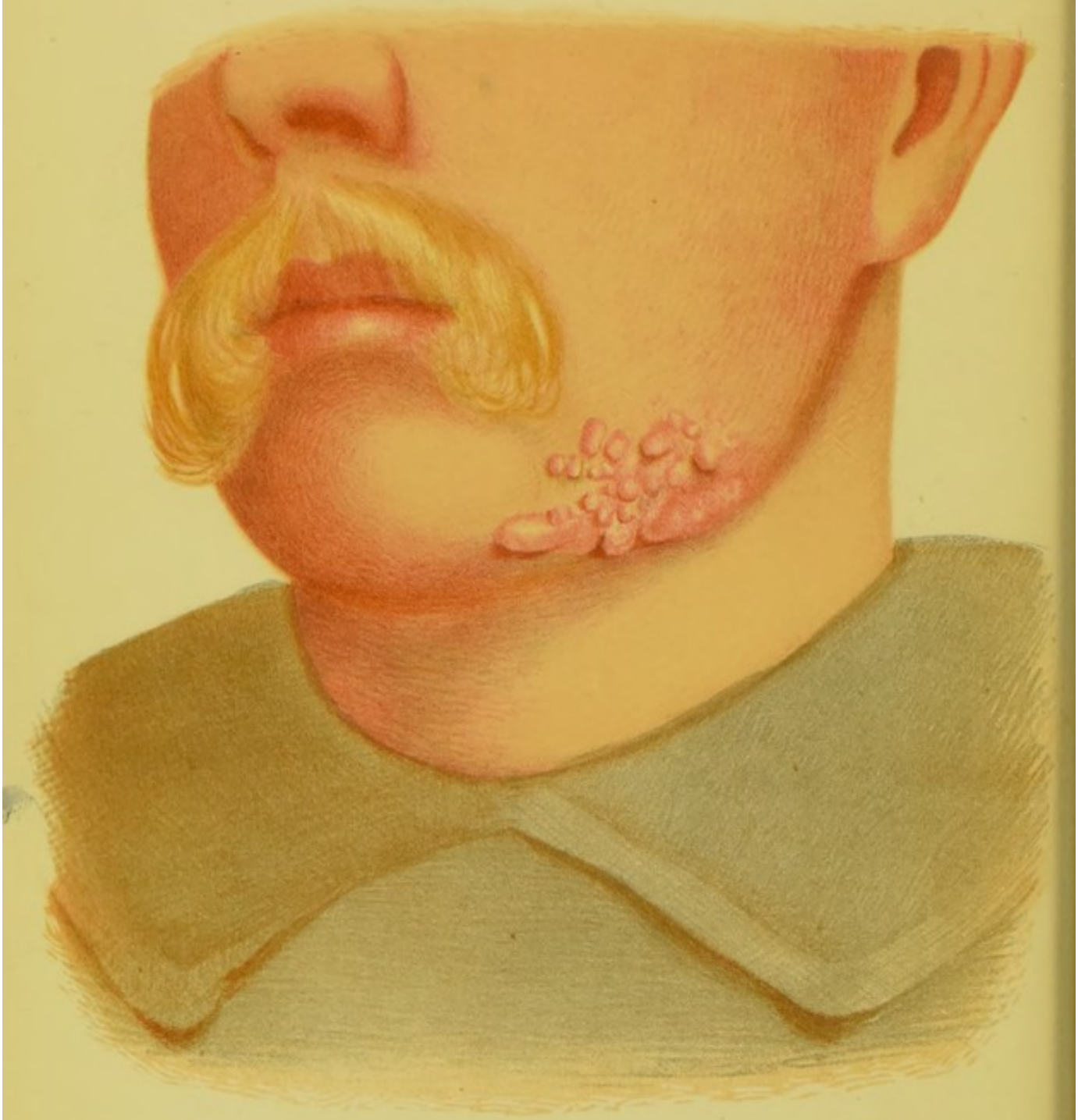
A case of myoma multiplex of the skin / by H. Radcliffe Crocker.

6



H. Toogood-Hill del. West, Newman chrom.

Dr Radcliffe Crocker's Case of
MYOMA MULTIPLEX.

Reprinted from the British Journal of Dermatology, *Nos. 99 & 100, Vol. 9.*]

A

CASE OF MYOMA MULTIPLEX OF THE SKIN.

By H. RADCLIFFE CROCKER, M.D., F.R.C.P. (Lond.),

Physician to the Skin Department, University College Hospital.

Cases of multiple Myoma of the skin are extremely rare, there being only a dozen cases on record.

Dermato-myomata have been classified by Babès in relation to the tissue from which the tumours have originated, into :—

1. Myomata springing from the vessel wall by proliferation of its muscular elements (angio-myomata). They are usually solitary and deep.

2. Hyperplasias of the arrectores pili forming multiple tumours, or portions of vascular nævi.

3. Neoplasms derived from the deep muscular layer of the skin (myome dartique of Besnier) *diffuse* as in Elephantiasis lymphangiectodes and Pachydermia myxomatodes, or *circumscribed* usually solitary, but sometimes multiple.

4. Myomata which reach the skin secondarily, or originate in misplaced embryonic "remnants." Except as regards the solitary tumours under 3, and those of 2, which cover the majority of the cases of multiple tumours, these distinctions can rarely be made out without microscopical examination; and Besnier's division, made from a dermatological standpoint, is simpler, viz., *Myoma simplex*, which includes the Myoma multiplex now under consideration, and *Myomes dartoïques*, which are usually solitary and spring from the dartos, and are chiefly interesting to the surgeon. This arrangement leaves out the cases included in Babès' fourth division, originating below the skin, which is secondarily involved.

It appears to me that a simple practical and comprehensive division would be into *Superficial* and *Deep* tumours.

The *Superficial* tumours would correspond with the multiple tumours derived from the arrectores pili, and less frequently from the muscular coat of the vessels, as in Hardaway's and Hess's case; and the *Deep* would include the solitary dartoic tumours of Besnier and all the other forms of Babès' classification, except class 2.

The case I am now about to relate comes into the category of Superficial Multiple Myoma, and is, as far as I can ascertain, the eleventh recorded case, and only the tenth observed during life, Verneuil's case having been discovered in the dissecting-room in 1858, and having, therefore, no clinical history. Two other cases reported by Walters stand apart from the rest and will be considered separately. Besnier, in 1880, was the first to give a clinical account of Myoma, and his description and critical commentary have done much to smooth the path of subsequent observers.

The patient was a gentleman at 43, who was sent to me in February, 1895, by Dr. Uhthoff of Brighton, with a congerie of tumours situated over the left ramus of the lower jaw.

There was nothing of medical importance worth noting in his personal or family history.

Eighteen years previously a single small tumour appeared, without any apparent cause, on the line of the lower jaw, on the left side. After about two years another appeared, about one inch from the first, and even when, a year later, he consulted Dr. Liveing about them, there were only two tumours present. Liveing regarded them as fibromata, and, as they gave him no inconvenience, advised him to leave them alone. Since that time they have gradually increased in number, and some of the older ones in size; but so gradually and painlessly that he could not give a more accurate account of their development, except that he thought they had developed faster the last year or two. When I saw him there was a single patch of closely-aggregated, but for the most part isolated, tumours, from a hempseed to a large bean in size; but the majority were not larger than a pea, the very first one of all not being bigger than a large pea. The largest tumour was the second one to appear, and was a compound one, at least three tumours taking part in its formation. There were altogether about twenty-seven tumours in the growth, which was

about 1½ by 1 in. in area. They were of a brownish-red colour, individually firm to the touch, and the whole patch could be easily pinched up and moved freely in any direction. They were absolutely painless, even when firmly pressed. The surface of the skin over them was unaffected. As he had never been able to grow whiskers, the group stood out rather conspicuously.

Complete removal was advised, to which the patient consented as soon as he had made his arrangements, and on April 20th I excised the whole group, and the wound healed by first intention, with only a linear cicatrix in the line of the lower jaw. The patient was kind enough to allow a drawing to be made, and to show himself before the Dermatological Society of London, where the only diagnosis that was suggested was that they were fibromata. The first sections made were stained with logwood, and the muscular structure was not

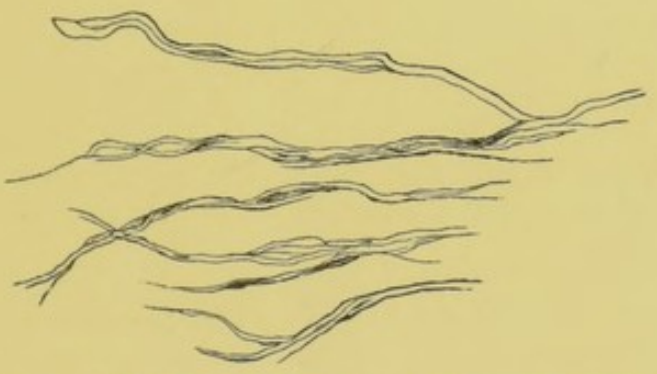


FIG. 1.—Smooth muscle fibres teazed out from a tumour after soaking in dilute nitric acid.

apparent, and rather suggested a fibrous structure; but the clinical features did not agree with those of fibromata, and on reflection I recalled Lukasiewicz's case, and then recognized that it accorded with the description of myomata, and on teazing out some of the fibres, after soaking a section in weak nitric acid, the smooth muscular fibres, as shown in the figure, were readily recognized.

The chief points in the case were the extremely slow, painless development and course, and the limitation to a single patch of closely aggregated tumours.

Before discussing the subject further, I propose to give an abstract of all the cases I have been able to find recorded, my own being the first English case, the others being scattered through French, German, Italian and American literature.

Case I.—Verneuil, Société Anatomique, 1858. Verneuil's case was from the dissecting-room.

The cadaver presented innumerable cutaneous tumours. In size they varied from a pin's-head to a nut. They were seated in the derma, and many could be felt rather than seen. The deepest only involved the deepest part of the corium. To the naked eye they were fibro-plastic, and in some points resembled neuromata. Microscopically they were formed partly of striated muscular fibres like those of the heart, partly of smooth muscular fibres. Some of the tumours had no vessels, whilst others were very rich in them. Nerve-fibres, vestiges of sebaceous glands and entire sweat-glands were also found in the tumours.

Case II.—Besnier, *Ann. de Dermat.*, Vol. I., 1880, p. 25, and Vol. VI.. 1885, p. 322. A washerwoman, æt. 60, was admitted into the St. Louis Hospital in December, 1876.

The patient had only been cognisant of the cutaneous tumours for three months, but as they gave her no trouble, and she sought relief for lung troubles, her statement as to their duration was unreliable.

On admission there were observed, on various parts of the trunk and upper limbs, first, springing from the healthy skin, irregularly-arranged, round or irregularly lentil-shaped, very pale red, slightly projecting spots, very like wheals of urticaria papulatum, or closely resembling the earliest papules of dermato-lymphadenoma, or mycosis fungoides; second, small tumours, of the form and size of a shot, lentil, or pea, the smaller pink, the larger dull red, in colour, disappearing on pressure. The surface was smooth and the epidermis normal. No sensory or subjective symptoms of any kind, except that strong pressure of the larger tumours produced rather sharp pain, this did not occur in the smaller. Their consistence was firm.

During a stay of some months in the hospital, about a score of new nodules gradually appeared, and the principal tumours increased in size. In 1878 she was seen again, and it was noticed that the older tumours had increased somewhat in size, and some fresh ones had developed. In 1884 she again came to the hospital, and the tumours had slowly increased in number and size, but the largest was not bigger than an almond; but their characters were unaltered, and while the tumours were sensitive to rubbing and pressure, there were no spontaneous symptoms. There was no return of the tumours removed for examination from the thorax. The tumours were found to consist almost entirely of smooth muscular fibres, in bundles, with a variable direction, and united by connective-tissue bundles. Nerve-trunks were also present, and numerous elastic fibres in a network round the muscular bands.

In 1885 she was again admitted to the hospital with emphysema and cancer of both breasts. At her death, shortly afterwards, there were uterine fibromyomata, as well as the double mammary cancer.

Case III.—Arnozan and Vaillard, *Journal de Medicine de Bordeaux*, 1881.—A female peasant, æt. 52, was admitted into the Bordeaux Hospital in August, 1880. The affection had commenced fifteen years previously, with a small red projection on the radial border of the right forearm, and similar tumours developed soon afterwards on the back of the forearm. They were isolated, quite painless at first, but at the end of two or three years they became the seat of very painful pricking, principally after exposure to cold. Their extension was progressive, continuous, but extremely slow. Five years from the commencement, the forearm and the

right arm were covered by small, projecting, hard, red tumours, some isolated and some confluent, which were the seat of violent spontaneous, as well as provoked pains. Three years later they extended to the neck and trunk, but with scarcely any spontaneous pains. For the last seven years the topography of the tumours was about the same, the sensory troubles having increased. The tumours were either isolated and irregularly scattered, or had coalesced into patches.

The smallest and most recent tumours formed pink, lentil-sized papules, which paled on pressure. They were imbedded in the dermis and covered with normal epidermis. On and between some of them were small, white, pin's-head points like milium. There was no alteration in the growth of the downy hair over or between them. As the tumours grew older, large and more projecting, their base was more sharply defined, their surface a deeper red, and the white grains on them were less conspicuous.

The skin was thickened where the tumours were conglomerated together.

The patient experienced the most violent neuralgic pains, which came on spontaneously both night and day, and lasted from minutes to hours. They could also be provoked by the least mechanical pressure or thermic change.

During the paroxysms, which always started from the oldest tumours, these became pale, and remained so until the pains had subsided. There were no nerve changes, even in the right limb, where the tumours reached their maximum, only that movements provoked the pains.

Her general health was good, and all her organs were healthy. Nothing relieved her neuralgia, and she therefore left the Hospital.

Microscopic examinations of one of the tumours removed from the forearm showed that it was made up almost entirely of smooth muscular fibres, arranged in interlacing bundles. Vessels were few, and there were a few nerve-filaments.

Case IV.—Brigidi and Marcacci. Imparziale, 1881.—A man, æt. 54, was admitted into the hospital in May, 1881. Two years previously a swelling appeared on the back of the right hand without any known cause, and was followed, three months later, by some nodules. Eighteen months later, the left hand was swollen, and soon similar nodules formed there. Up to quite lately, he felt no pain, but when the skin became red there was a sensation of heat.

On admission, both hands were œdematous and slightly congested, and here and there were pin's-head to pea-sized nodules; some were flat, others were lenticular. They were situated between and on the back of the fingers, and the skin over them was stretched, shining, reddish, and warm, and could not be pinched up. The redness disappeared on pressure. There was no pain. On the back of the hands were spots of variable size, and of a deep vinous colour. One of them, irregularly rectangular, was situated on the inner border of the carpus, it was inflamed, and was not decolorized by pressure.

On the left foot, were scattered nodules like those on the hands, of a dark red colour, deeper than those on the hands. There were also wine-coloured spots. There were no nodules on the right foot, but spots which were not removed by pressure and without œdematous congestion.

One of the tumours removed for microscopic examination showed that it was composed of smooth muscular fibres united into bundles.

There were no vessels in the mass, but the surrounding connective tissue abounded in arterioles of which the muscular coat appeared hypertrophied, the adventitia infiltrated with small lymphoid cells, and the lumen considerably

contracted. The veins were dilated, some of them surrounded by a feeble lymphatic infiltration. There were no nerves in the tumour itself, but they were present in the peripheral parts.

Case V.—Hardaway, *American Journal of the Medical Sciences*, April, 1886, p. 511.—A pedler, æt. 36 years, dated his complaint one year before he came under observation. He first experienced a drawing pain on the right side of his back whenever there was any change of temperature, it lasted about five minutes, and there was then nothing abnormal. The pains came in paroxysms at varying intervals of two or four days, or two or three weeks. Pressure did not excite the pain at first. After a time a few lesions appeared at the seat of pain and gradually increased in number, but owing to their position he could not be very definite in his statement, but believed that there had not been much change during the six months before Hardaway saw him. He found him a strong, healthy man, who had had no previous illness, but was much exposed to weather vicissitudes in his occupation.

The neuralgic pains not only persisted, but the paroxysms became more frequent and severe, but chiefly nocturnal and largely dependent on the weather. They came on quite suddenly, but only lasted two or three minutes. They were localized to the tumour area, were relieved somewhat by strong pressure, and did not recur the same night, but were most agonizing while they lasted. In the intervals, the skin was not tender to slight pressure, but moderate deep pressure over the larger tubercles made him drop to the floor in momentary agony. Pressure on the smaller tubercles only gave slight pain. The tumours formed a patch on the right back, just below the scapula, sloping from the spine downwards on the rib lines. It was 4½ inches long and 2½ inches wide. Two small tubercles were on the left side of the spine, and a few on the lower end of the scapula.

The patch as a whole was of a reddish colour, and made up of an aggregation of tumours and infiltrations of various sizes, the largest being the size of hazel-nuts and not unlike flesh moles, and covered and sessile; the smaller ones were very slightly elongated and spindle-shaped, or arranged in lines and streaks. They were freely movable and the skin over them was normal.

One of the large ones was excised, and Dr. Bremer who examined it reported that it was situated chiefly below the derma, and was composed of interlacing bundles of smooth muscular fibres apparently derived from the muscular coat of the arteries and veins judging from the condition of the muscular coat of the vessels adjoining the growths; neither vessels nor nerves were found in the tumours themselves.

Case VI.—Karl Hess, *Virchow's Archiv.*, Band CXX., 1890, p. 321.—An unmarried woman, æt 19, was under the care of Professor Czerny. She had what she called "warts" on the nose from the age of three or four years, which had gradually increased in size. They had been cauterized eight years before in Münich, but with very little improvement. They were never painful. The so-called "warts" were composed of closely-aggregated large hemp-seed-sized nodules on the end of the nose, and less closely set on the right side of the nose. They were in the cutis, the epidermis being slightly raised over them, but intact. They were of a yellowish-white colour, somewhat translucent, and felt hard. There were traces of an increased number of blood-vessels in the neighbourhood of the growths.

The diseased area was removed by Czerny, and examined by Hess. The portions of skin removed were 20 mm. and 16 mm. in length respectively, and

5 mm. and 6 mm. in diameter. In section, each showed half a dozen small growths, from a millet-seed to a lentil in size, imbedded in the corium, the surface being slightly raised over the larger ones only. About a dozen growths were removed at a subsequent operation. A slight discoloration, and a scarcely perceptible elevation, marked the position on the upper area, and at the elbow, where tumours were said to have once existed and subsequently disappeared. There was no disturbance of sensibility over the tumours, nor pain on pressure.

Two small tumours were excised, and very similar results were obtained to those in the previous case. The only differences were unimportant, and consisted in the much smaller size of the nodules, and consequently less interference with the corium, sebaceous and sweat-glands. The muscular mass, however, was more closely applied to the epidermis, being only separated by a narrow line of connective tissue. There were scarcely a trace of the nests and collections of round cells found in Jadassohn's first case.

Microscopically, the growths were found to consist of smooth muscular fibres, running in various directions. There were no connective tissue strands in the internal part of the growths, few or no blood-vessels, while at the periphery the blood-vessels were numerous. The muscular coat was markedly developed and connected directly with the muscle-fibres of the tumours. Apparently blood-vessels were present in the internal parts of the growths, but had become obliterated. The larger tumours were surrounded by connective tissue, something like a capsule, but this was not present in the smaller ones. The papillary layer was flattened over the larger growths. In more than one instance the increase in the thickness of the vessel walls was due to the increase in the muscular fibres, which, by a further development, encroached in a diffused manner on the connective tissue. In some places muscle-fibres were sharply defined, and this must be considered the primary stage in the development of the circumscribed tumours, but Hess could not be certain how the tumours arose where there was diffuse development. There was no evidence of the arrectores pilorum being a starting point.

A few nerve-fibres were discovered in the tumours. Hess considers that there was conclusive evidence of the tumours starting from the muscular coat of the blood-vessels, and that therefore it belongs to, or is a variety of the angio-myomata of Babès.

Case VII.—J. Jadassohn, *Virchow's Archiv.*, Band CXXI., 1890, p. 88.—A woman, æt. 29, was admitted into the Breslau Hospital, in September, 1888, with a family history of cancer and phthisis. The disease had existed for more than ten years as very minute red nodules on the right forearm, chiefly about the middle, and attended with neither itching nor pain. The nodules slowly but steadily increased in numbers. The right arm was next attacked, and the oldest lesions gradually increased in size. Pains did not begin for some years (the patient could not give exact dates), occurred at first in rare paroxysms, then these increased in intensity, extent, and frequency, while the lesions had extended to the back of the shoulders. All attempts at treatment failed.

When first seen by Jadassohn the patient was small, anæmic, and badly nourished, with strumous enlargement of the glands on the right side of the neck extending to the clavicle. The new growths involved the whole extensor surface of the right upper limb, from the deltoid to the wrist, the posterior fold of the axilla and an area of about a hand's breadth over the scapula. The disease also affected in a minor degree

the flexor surface of the arm, just above the elbow, and the upper third of the forearm. At the upper end of the arm the lesions were arranged on a band, 1½ fingers broad and reaching to the base of the scapula; on the thorax and on the most lateral parts of the sub-clavicular fossa there were a few small lesions, also with a stripe arrangement, the parts most affected were the middle portions of the arm and forearm.

The smallest lesions were circular or slightly oval, pale red, firm, large pin's-head-sized papules, seated in the cutis, and slightly raised above the level of the skin. The epidermis over them was thin and smooth, except in a few instances, when it was wrinkled. The borders of the lesions were well defined, and the colour disappeared entirely on pressure. Besides these lesions there were irregularly-shaped tumours, almost hemispherical, firm to the touch, and comparable in this respect to scar-tissue. They were of a rather duller red than the first lesions, and pressure left a light yellowish discolouration. The largest tumour was the size of a hazel-nut. Some of them, although otherwise hemispherical, presented a flattened surface and scar tissue, the latter the result of previous cauterisation. Between these extremes were a number of intermediate forms.

On the back of the shoulder they were broader and flatter, irregular in shape, and, at a cursory glance, much like urticarial wheals. The nodules were all in the cutis, and freely movable.

The arrangement of the lesions was irregular, more or less aggregated, or arranged in small bands or stripes in the direction of the folds of the skin.

The thin, scanty, lanugo hairs remained at the apex of the tumours.

The skin between the lesions and the sensibility over the muscles of the arm and shoulder were normal.

Strong pressure on the large tumours was very painful, but pain ceased at once when pressure was stopped. She had, however, severe spontaneous paroxysms of pain seven to eight times a day, and sometimes as often as fifteen times. The pain commenced on the largest tumours on the arm, and spread to the hand. Each paroxysm lasted about ten minutes, and the pain was localized to the skin. They were worse in cold weather, but could not be artificially excited. All treatment failed to give her relief, even excision of the most painful tumours did no good, though the wound healed readily; and during the many weeks that the patient remained in the hospital there was no recurrence.

Microscopically, the tumour presented the typical appearance of smooth muscular fibres, with scarcely any vessels, and those small, and no nerve fibres. There was an increase of connective tissue, both round and in the centre of the tumour. In a small tumour the centre was less compact, and a diffuse network of muscle-fibres was seen. There was nothing abnormal in the hair-follicles, arrectores, or arteries.

Case VIII.—Jadassohn, *loc. cit.*—A woman, æt. 37, entered the hospital at Breslau in March, 1890.

She stated that the skin of the right arm had been affected as long as she could remember, and that her mother told her that it followed vaccination performed at the end of the first year of life. She remembered that the disease was well developed at the age of seven years, and from that time until a few years ago she was troubled with itching of the affected arm, especially about the elbow, but this has ceased for the last six to seven years, and she has never had any pain. She is also certain that five or six years previously a number of the nodules, some of them

of large size, had disappeared, and that the remaining ones had got smaller. There was nothing of interest in the patient's own or in her family history.

The condition on admission to the hospital was as follows :—

From the middle of the arm to the wrist the whole of the extensor surface presented lesions, from a pin's-head to a lentil in size, dull red in colour, and round or oval in shape. There were also a few on the flexor surface of the forearm. On the arm a palm-sized area was covered with lesions, so numerous and closely aggregated, that merely narrow strips of normal skin could be seen, in other parts the arrangement was linear or in stripes. The nodules were situated in otherwise normal skin, and were raised more or less above its level. There were no large tumours. The early stage was best seen at the periphery of the affected area, where the smallest lesions, which were distinctly hard, were situated. They were evidently formed in connection with a hair-follicle, as a stump of a lanugo hair projected from some of the lesions.

Case IX.—W. Lukasiewicz, *Archiv. für Derm. u. Syph.*, Vol. XXIV., 1892, p. 33, with coloured plate.—A male singer, æt. 23, was admitted into the Dermatological Clinique of Professor Kaposi. Except that he was in a high degree neurasthenic there was nothing in his own or in his family history of interest.

The lesion began four-and-a-half years previously, as a split-pea-sized nodule in the right leg, he scratched it and a dark brownish substance oozed out. In a short time split-pea to bean-sized, pale red, elastic nodules formed on the extensor aspect of the left thigh, and subsequently on the leg. He tried to dig them out with his nails, but they gave him too much pain, while fresh ones kept developing in crops until his admission to the hospital. He said that the prominence of the nodules varied, and that they gradually became firmer and paler. Some were said to have disappeared and others to have become smaller, through the local use of tincture of iodine. At first they gave him no inconvenience, except on scratching or very firm pressure, when slightly pricking pains came in them. During the last eighteen months their size had increased, with slight pain occasionally in the daytime. During the last year the pains had increased in frequency and severity, radiating over the whole extremity and accompanied by sweating, palpitation, and anxiety. When in the hospital the pains lasted from five to ten minutes, but sometimes as long as an hour, and came on at various intervals; during the attack the blood flowed to his head and his eyes swam. Mental excitement, hunger, digestion, and defæcation brought on and intensified the pains, while external influences, such as hot baths, sometimes excited, and at others alleviated or stopped the pains. When walking he feels slightly tired and stiff in the diseased extremity. The radiating pains and the accompanying anxiety had latterly awaked him at night. On admission to the hospital the patient was a medium-sized, slightly-built, rather anæmic man, but, with the exception of increased irritability of the tendon reflexes, there was nothing else of note in his general health.

On the external aspect of the lower half of the thigh there were about thirty, from millet-seed to pea-sized, round or oval, bluish-red or pale brown nodules, which were in the skin, but projected slightly and were freely movable. The epidermis over them was normal, even the lanugo hairs being as abundant as elsewhere. The nodules were sharply defined, firm, paled on pressure, and were then painful.

In the middle of the left leg there was a palm-sized zone of sixty tumours, similar to those just described, except that they were much more densely crowded, and mostly larger, many being bean-sized, hemi-spherical or oval, firmer and more

painful than the small ones. They were irregularly arranged, some scattered, some crowded, and the skin between them was normal. A slight touch produced considerable contraction of the extremity, and pressure produced a series of convulsions of the whole body like an electric shock.

Moderate pressure produced severe radiating pains, sometimes increasing to a regular neuralgic attack. These pains varied much according to whether the patient's attention was excited or diverted. There was no objective change in the nodules during the paroxysms. Two of the largest and most painful, and one of the small tumours were excised and examined microscopically. They were found to be situated in the more superficial layer of the corium, the deep portion and the subcutaneous tissue being free. They were composed mainly of smooth muscular fibres, and there was no abnormality in the nerve fibres to account for the intense pain. In the tissue at the periphery of the nodules there was an increase of the muscular tissue, in the vessels, and in the sweat-glands. Even in the neoplasm itself there was continuity of the muscular fibres from these elements. The author therefore concluded that the neoplasm might start from muscular elements of the hair-vessels or sweat-glands, thus agreeing with Jadassohn, who admits that the neoplasm may start from the arrectores pili, and with Hess, who found the muscular coat of the vessels very strongly developed in the case he observed. The moderate round cell infiltration in the connective tissue of the tumours the author regards as inflammatory. The sensitiveness to pressure must be attributed to the pressure on the nerves below the tumours, and not to nerves in the tumours.

Some improvement in the pains was produced by subcutaneous injections of arseniate of soda, but five months later it was found that where the tumours had been coloured both before she left the hospital and afterwards, there was considerable improvement as regards sensitiveness. Lukasiewicz's case is noteworthy in the youth of the patient and the more superficial position of the tumours in the skin.

Case X.—Jarisch.—At the Fifth Congress of the German Dermatological Society at Gratz, Jarisch is briefly reported, in the "Dermatologische Zeitschrift," Vol. II., 1895, p. 609, to have shown a case of a cretin, æt 54, who is said to have suffered from childhood from the affection, which chiefly occupied the left half of the face. The disease consisted of nodules and flattish infiltrations, which were originally small, and appeared to give the patient but little trouble, but in course of time they increased in size, and then on pressure, and even spontaneously, especially in winter, they gave severe pain, often coming on in paroxysms, and at the same time the patient was tormented with intense itching. In the folds of the face the patient shows, especially on the left cheek, a very firm nodular new growth, partly isolated, and partly forming a flattish infiltration. The epidermis over all was unaffected, except that here and there it is of a darker colour; the growths are partially translucent, very painful on pressure, and only movable with the skin.

As already mentioned, they were most numerous on the left side of the face, but were also present on the left side of the forehead, in the course of the supra-orbital nerve, in the form of convex isolated nodules up to a pea in size, while on the right side of the face they were few in number.

Microscopic examination showed that, after staining in various ways, that the nodules were chiefly composed of smooth muscular fibres taking various directions, and that the growths were situated in the pars reticularis.

In the discussion of these cases, the last two by Wolters must be considered separately, as they differ so markedly from all the rest in their clinical characters.

An analysis of the other cases shows that there were seven females and four males; that the age at which the tumours began to develop varied from infancy (Hess's case was probably congenital) to 60 years; that the tumours varied in size from a millet seed to a hazel nut, but that they were seldom larger than a pea; that the number of the tumours was very variable, sometimes being "innumerable" (Verneuil and Besnier), or in moderate numbers, and with a very limited distribution, the latter being the rule. While, also, the tumours may be isolated, there was a strong tendency to group with or without coalescence either into irregular patches or in lines or bands, but wherever there was an interval, the intervening skin was normal. There might be only a single patch, as in Hardaway's, Hess's, and in my own cases, or there might be several patches with or without scattered single tumours, but there was no symmetrical arrangement either in the groups or isolated lesions. Sometimes the aggregation was so close that an infiltration was produced. The colour was usually brownish-red, or some other shade of red, removable by pressure, but once yellowish, and even semi-translucent, as in Hess's case, which was rather an exceptional one. The surface of the skin over the growths was always normal, the texture firm, and the tumours were in the skin, and freely movable with it over the subjacent parts.

The new growths developed very slowly, at first singly, but with a tendency to constantly increase both in size and number, without antecedent lesion, except in Brigidi and Marcacci's case, in which swelling of the part was the first sign observed. Sooner or later there was pain in six out of the eleven cases, the other five having been painless throughout. The pains were usually spontaneous, paroxysmal and severe, lasting from minutes to hours, but could always be excited by strong pressure, and sometimes by changes of temperature, especially by cold. These pains developed gradually, and were generally absent until the tumours had attained to the size of a pea or larger, but in Hardaway's case, pain in the region in which the tumours subsequently appeared was the first symptom to attract the patient's attention. Itching was present in one of Jadassohn's cases. Microscopical examination makes it probable that the pains were due to

pressure on nerve endings outside the tumours. In other respects the tumours were always perfectly benign, never infected glands, and never recurred after excision, which did not, however, in all cases relieve the pain. It will be noted that there is no special localisation of this form of neoplasm, the upper and lower limbs, the trunk, neck and face (three cases) having been attacked in different cases, while in Verneuil's case, as far as can be gathered from the meagre accounts of it, all regions of the body were involved.

With all these variations in the symptomatology it is difficult to find any one symptom absolutely constant, but on the whole the most characteristic features are :—

The extremely slow but progressive development of the tumours in number and size ; the tendency to group into close and semi-coalescing patches, and their asymmetrical distribution ; the moderate size attained by the tumours, which were seldom larger than a pea ; the dull red colour and firm consistence of the tumours with a normal epidermis over them, and their mobility over subjacent parts, their painless character at first, with the subsequent strong tendency to most severe paroxysmal, spontaneous, and provoked pains, and finally they do not recur after removal.

Special Cases.

Case I.—Multiple Myoma of the Skin. From Doutrelepont's Clinique, by M. Wolters, *Archiv. für Derm. u. Syph.*, Vol. XXV., 1893, p. 414, with plate. Joseph W., æt. 40, a broker, was first seen on December 18th, 1890. There was nothing of medical interest in the family or patient's history. The present disease began about fifteen years ago, when he was 25 years old. The lesions commenced as pin's-head-sized, reddish-yellow papules about the elbows. They slowly increased, reaching to the size of a lentil, in some parts so closely aggregated, especially at the elbows, as to form large patches. At a later period, which the patient could not quite fix, similar lesions appeared on the knees, and more recently the posterior surface of the thighs became affected. There has been no pain, and no subjective symptoms at any time, except slight itching now and then.

The patient was short, thick-set, and fat. There was no sugar or albumen in the urine, and all the organs were sound.

On the knees and elbows were small pin's-head to lentil-sized flat elevations, reddish-yellow, firm, not well defined ; most closely aggregated over the lower border of the patella and over the olecranon ; there was no sound skin observable between the lesions ; the patches were formed by the juxtaposition of individual lesions. Discrete papules and small tumours were seen irregularly scattered

beyond the patches and stripes. On the posterior surface of the left thigh were similar flat, reddish-yellow elevations on otherwise normal skin; here also, in some places, ill-defined patches were formed. Nowhere were the lesions arranged in the course of the vessels or the nerves. The small tumours were not painful on pressure nor much altered in colour.

A portion of skin was excised from the right elbow, and part of it was cut with the freezing microtome, while the rest was hardened in alcohol and imbedded in celloidin.

Microscopical Examination.—The epidermis over the new growth was thinned and the interpapillary portion flattened by pressure of the neoplasm, which was separated by a small interval from the rete. In some places they were directly contiguous. The basal layer of epithelium was slightly pigmented, and here and there were single pigment cells and flakes. The mass of the new growth consists of irregularly winding and interlacing bundles of smooth muscle fibres, between which the lumen of a vessel was caught here and there. The muscular portions of these vessels were hypertrophied and rich in nuclei; the last were rich in chromatin, but there was no karyokinesis. The muscle bundles of the tumour lost themselves gradually or ended abruptly in the surrounding connective tissue which in some parts formed concentric layers apparently pressed upon by the growth. Elastic fibres were revealed by orcein staining or treatment with liquor potassæ. Close examination showed that the new growth elements were directly connected with the normal muscular tissue present in the skin, especially about the hair follicles, glands and vessels. Between the specific tumour elements, especially about the hair follicles, glands and vessels, round cell collections were observed; also in these situations were a few small cells shown by Unna's method of staining, but there were more of them in the deeper tissues of the corium. There were no plasma or eosinophile cells.

The muscle fibres stained yellow with picric acid, brown with safranin, brick-red with Ehrlich's triple acid mixture on the fuchsin-red background of connective tissue.

Case II.—M. Wolters, *loc. cit.* Guy L., aged 20, labourer, was an in-patient at the Evangelical Hospital on March 15th, 1892. He had been run over, receiving an injury to the left hand and right thigh, but got well in three weeks. Whilst in the hospital he complained for the first time of thirst and feeling out of sorts. Sugar but no albumen was found in the urine, and diabetic treatment was therefore adopted. There was no skin lesion during his stay in the hospital, but at the beginning of January, 1893, *i.e.*, nine months after the accident, pin's-head-sized papules appeared, first on the elbows then on the knees; they increased to the size of a lentil, and others formed, but there were no subjective symptoms before or during the eruption.

There was nothing of importance in the family or in the patient's history.

The man was strong-looking, well-built, and well nourished, and no visceral disease could be discovered.

The eruption consisted of small pin-head to lentil-sized yellowish-red, oval or crescentic papules situated in the cutis. The epithelial layers were movable over them. They became paler on pressure, leaving a yellowish-grey colour, and were very firm; the growths gradually merged into the skin. Over the largest tumours the epithelial covering was intact, but it was wrinkled in places. There was no abnormal pigmentation; lanugo hairs were present.

The extensor surfaces were principally affected from the middle of the arm to the middle of the forearm; the same applies to the thigh and leg. The lesions were more closely aggregated about the patella and olecranon, forming flat elevations. On both forearms the flexor surfaces were symmetrically affected about the supinator regions, but more on the right than on the left side.

The tumours were not in the lines of the vessels or nerves, nor was there any connection with the folds of the skin.

There was no pain on pressure, nor any other subjective symptoms.

Microscopical Examination.—A piece of skin, excised from the left elbow, confirmed the diagnosis of Dermato-myomata cutis.

The appearances were very much like the last case. The growths were restricted to the corium, and there was a certain amount of flattening of the interpapillary cones where the tumour was in contact with the rete. There was no pigmentation and no infiltration, except in those parts where the epithelium and the tumour were in contact. Both in the region of the growth and beyond it the vessel walls were thickened, the muscle nuclei very much increased, and there were collections of small round cells here and there. Nerves were only found at the periphery of the growth, and were quite normal.

The subsequent course of the case was as follows:—On March 10th, 1893, the wound had healed, and the tumours in the immediate neighbourhood had somewhat involuted, some having flattened down to the level of the skin. On March 20th fresh papules had appeared on the flexures of the limbs, on the chest, abdomen, and gluteal regions, and there was slight itching. On April 4th there were fresh papules on the dorsum of the hands, and in other parts older papules were increasing in size, with fresh papules appearing, and the patient complained that the lesions were painful on pressure, as on sitting, &c. Itching also was fairly marked, and there was scratching on the back of the hands, leading to excoriation of the lesions, and a tendency to heal badly.

Wolters comparing his two cases says: In Case I. the new growths were more compact and better defined; in Case II. there was more of a network, with a smaller firm central nucleus of growth, apparently originating from the neighbourhood of a hair follicle, whereas Case I. originated from vessels. There were more collections of round cells in Case II., but on the other hand the epithelial layers were more implicated in Case I. This was explained by the difference in their respective durations, viz, Case I., 15 years; Case II., 3 months. There was also a difference in distribution of the two cases. In the first case the lesions were on the elbows and knees, and posterior surface of the thighs. In the second the elbows and knees were also affected, and on the flexor side they were symmetrically distributed about the supinator region.

The comparison of the cases reported by Wolters with all the rest brings out many and striking differences. This is most marked in his second case, which developed acutely, involving an extensive area on the limbs within three months. All the other cases have developed very slowly, requiring many years in the majority of cases.

It was symmetrical in its distribution, with a special predilection for the region of joints; the other cases of myoma of the skin have

shown no special predilection for any part, and have been notably unsymmetrical in their distribution.

There was a yellowish discoloration left on pressure—none of the lesions were larger than a lentil. In all the other cases, except that of Hess, the colour could be entirely pressed out, and was of some shade of red. The patient had suffered from glycosuria. On the other hand, the resemblance of this case to Xanthoma diabeticorum is so great that, apart from the microscopical examination, no differences can be pointed out, and Wolters himself was so struck by the resemblance to my case of Xanthoma diabeticorum reported in the *British Journal of Dermatology* in 1892, and portrayed in Plate LIX. of my Atlas, that he suggests that my case was really one of dermatomyoma in an early stage.

Now it so happens that this case was so typical in its characters that an unsuspected diabetes was diagnosed from the eruption before the urine was tested, and all the lesions rapidly disappeared under anti-diabetic treatment. I cannot help, therefore, turning the tables on Dr. Wolters, and claiming his case as an example of Xanthoma diabeticorum.

Wolters' other case is very like the diabetic case in its clinical features, except that it was very slow in its duration and course, and the patient had no glycosuric or any other visceral complication, as far as could be ascertained. It, however, closely resembles cases of Xanthoma multiplex occurring in patients who have neither jaundice nor glycosuria, and the long duration of the lesions may account for the absence of the characteristic giant cells. But if Wolters' microscopical examinations are to be accepted as conclusive that the lesions in his cases were those of dermatomyoma, then their remarkable clinical differences from all the other cases require them to be placed in a separate group.

The microscopical observations of my case, which were omitted in the first part of my paper, as the microscopical drawings were not ready, are here appended.

The epidermis was quite unaffected. The growth was situated in the deep part of the corium, leaving the papillary layer quite free in some sections, but going right up to the papillæ in others. In the small growths it was readily seen that they were situated round

the hair follicles, of which a larger or smaller part was always to be seen in the centre of the growth.

The actual hair and follicle was unaffected, but both in longitudinal and transverse sections the follicle was closely invested with a thick layer of smooth muscular fibres. These could also be seen very conspicuously in some sections surrounding and separating the acini of both sebaceous and sweat follicles, and strands of such fibres were frequent in such special relationship. As the fibres went in various directions, many were seen in cross-section. The blood-vessels were not numerous in the growth, but wherever present they were conspicuous from the evident thickening of the muscular coat. The veins below the growths also showed similar thickening.

The muscular fibres were most evident in picro-carmine, and in carmine sections. In many of the logwood sections the general appearance was of a homogeneous structure, with innumerable nuclei. Only at the borders of the growth if it was at the edge of a section, or round or close to a hair follicle, were the smooth muscle fibres to be made out.

The proliferation of the muscular coat of the vessels was, however, always visible.

EXPLANATION OF PLATE II.

FIG. 1. Shows under a $\frac{1}{12}$-inch objective a hypertrophied arrector pili coming away from a hair-follicle partly visible at the right of the section, and other smooth muscular fibre-bundles between the acini of a sebaceous gland and others on the right of the section going in various directions.

FIG. 2. With a 1-inch objective shows enormous development of muscular fibres round a hair-follicle.

FIG. 3. Also with a 1-inch objective gives a general vertical view of a portion of a small tumour with bundles of muscular fibres between the acini of sebaceous glands round hair-follicles, and at the lower part of section between the sweat-coils. The confused mass above these distinct muscle fibres, and running up to the papillary layer, is tumour substance made up almost entirely of muscular fibres in cross-section.

FIG. 4. With a $\frac{1}{8}$-inch shows very distinctly the muscular fibres surrounding and isolating the coils of a sweat-gland. At the top of the section is a portion of a sebaceous gland.

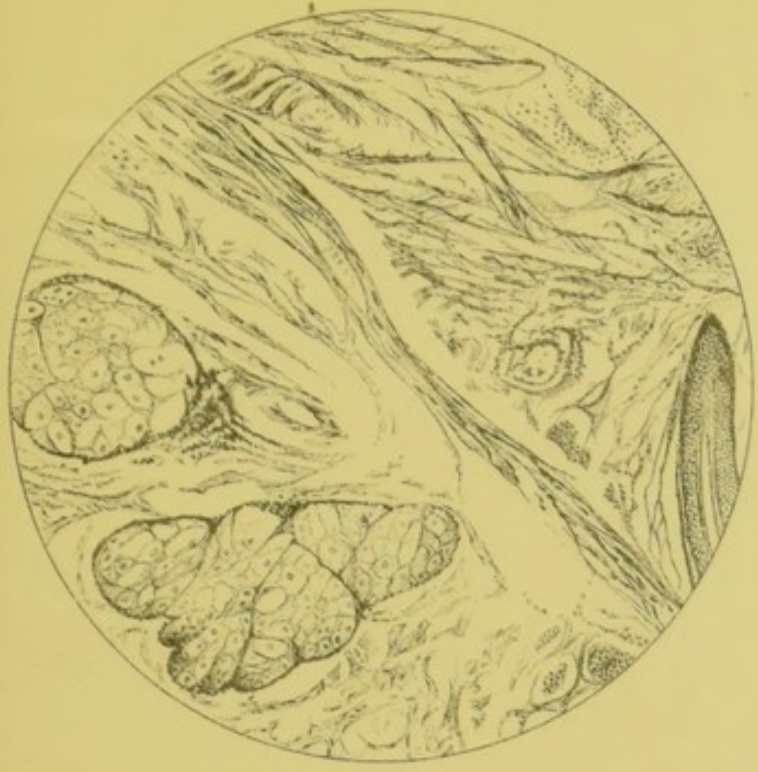


Fig. 1.

Fig. 2.

Fig. 3

Fig. 4.

Dr Radcliffe Crocker's case of
Myoma Multiplex.
Plate II.

A. Danielsson del

Danielsson & Co. Sc