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ZONA.

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MONG the diseases of the skin which are easily recognized, even by the laity, may be reckoned zona, or, as it is perhaps better known by the name of, herpes zoster. It is the "shingles" of the old granny, and nearly every one has had an opportunity of observing one or more cases of the affection. It is called an acute disease of the skin and is included by the majority of writers in the inflammatory class. There is certainly some reason to question this, as it is primarily due to some organic alteration in the nerves. This is no doubt the reason why zona in adults is invariably preceded by premonitory symptoms which manifest themselves in the form of a neuralgia which is of an apparently intractable character, as it does not yield to any form of medication addressed to the alleviation of the pain. This neuralgia is of a peculiar character in this way, that it affects the area which subsequently becomes the seat of the affection. After the neuralgia has existed for some time, for days in some cases, the eruption makes its appearance. This eruption of objective lesions, however, is by no means a signal of the departure of the subjective symptoms. The neuralgia, malaise, and other untoward symptoms may not only be present, but generally persist for some time. In fact, it is this pain which causes the greater part of the complaints made by patients. The constant neuralgia is not only of a very marked character, but is inclined to be persistent. It is generally said that the prodromic neuralgia exists about two weeks before the appearance of the eruption, but this cannot be regarded as a fixed rule, for it may not have been felt for a longer period than a few days before the cutaneous symptoms appear. At all events, the period is of a sufficient length to make quite a marked impression upon the general condition of the one subject to the trouble.

The eruption is one which is easily recognized, as a rule. The laity are all very quick to know it and have a good idea of its subjective symptoms and course. And yet, unless the lesions and their grouping be well understood, mistakes in diagnosis, even by physicians, are apt to occur. The eruption first appears in the form of an erythema or reddening of the skin, more or less limited in its outlines. The color is quite a bright red and there is tingling and smarting of the skin experienced in addition to the neuralgia. The distribution of the erythema should always give rise to suspicions of the true nature of the disease, as it occupies the portion of skin which will later on be covered by the characteristic lesions and which will be described further on. Succeeding the erythema there may be noted

the appearance of a crop of vesicles arranged in groups. Each group consists of from three to twelve or more vesicles which vary in size from a millet-seed to a split pea. As the lesions grow older they also grow larger and new crops successively appear one after the other. One fact to be noted is the peculiarity of the grouping of the vesicles, which is distinctly herpetic in character and partakes a great deal in the nature of herpes. In fact, the French have applied a generic name to all of this group of vesicular distribution in the herpetides, and even contend that there exists a herpetic diathesis. Another peculiar fact in connection with the eruption of zona is that the groups of vesicles are not totally isolated. They are in a manner joined to one another by scattered vesicles occurring here and there, as if an effort had been made to produce new patches and had proven abortive. A glance at almost any good picture of zona will show this in a very plain and marked manner. The vesicles in zona are filled with a clear serum, and each lesion is surrounded by a bright-red areola; so that, upon a mere superficial examination, the eruption looks as if the translucent vesicles had been implanted upon a bright-red field, whilst closer examination will reveal a distinct areola around each one, the periphery of the areola being not so bright as that portion immediately around the vesicle.

One of the most interesting features in connection with zona is its distribution. This is valuable to the observer as well, as it enables him to recognize the disease and formulate a diagnosis much more easily than he could otherwise, and it will often keep him from falling into the pitfall of being an alarmist without any adequate reason for so doing. The distribution of the lesions is such that the groups of vesicles lie in the tract of distribution of some cutaneous nerve and its branches. Occasionally the tracts of two or more nerves are implicated; but, even in such a case, each one will be accompanied by its own eruption, which will be entirely distinct from the other. It is on this account that the eruption, when occurring upon the trunk, ceases abruptly at the median line, almost always. I say the latter advisedly, as will appear later on. It does occur sometimes, however, that the corresponding cutaneous nerves of the trunk on either side will be simultaneously affected, and then we have true "cingulum," or "girdle-rash," which superstitious in former years regarded as inevitably fatal. Old crones to-day will assert that when shingles goes around the body the patient dies. There is no doubt whatever that the attack is more severe, but it is not a fact that it is fatal. The reason ascribed for the eruption abruptly ceasing at the median line is that the nerves do not cross it, and yet there seems to exist exceptions to the rule. An example of such a condition is shown in Figure 1. The patient, a woman, was affected by a zona extending over the left hip and lower part of the abdomen. In the dorsal region, at about the lumbo-sacral juncture, a patch of vesicles extended horizontally across the median line. This certainly goes to show that cutaneous nerves occasionally develop aberrant branches after complete fusion of the embryonic clefts has occurred. It is also of value as a warning to the physician not to reject a diagnosis of zona from the mere fact that a patch slightly overlaps the median line. Such cases are by no means as rare as text-books might lead us to suppose, and a little more attention to this point will reveal a greater number of these apparent exceptions.

As has been stated above, the vesicles in zona are filled with a serous, translucent fluid which, later on, becomes opaque and undergoes purulent transformation. It is not an infrequent occurrence for a number of vesicles which are in close proximity to coalesce. If the lesions are not subjected to friction, or to some similar external influence, crusts will form and develop in the course of eight or ten days and then drop off. As a sequel to these crusts there are very thin scars which are stained a rather light-brownish color and, in the course of time, become white, so that the former site of the lesions may be easily discovered years after they first appeared. Should the vesicles be bursted it is not unusual, but rather the rule, for ulcers to form. These ulcers are peculiar in their course as well as in their nature. They are rather deep and the destruction of tissue is well marked. Not only this, but they have a tendency to be chronic and do not heal readily, even under the best of treatment. Rather thin and unhealthy

FIG. 1. Zona Crossing Median Line.

crusts form which are not closely adherent, but fall off at the slightest provocation. The secretion is purulent and somewhat sanious, and there is a considerable amount of pain present. The cases which are affected in this manner naturally last longer than those which are properly treated. The disease, as a rule, will continue for two or three weeks if untreated, and the ordinary methods employed for combating the disease curtail this but little. On the other hand, an abortive treatment which is efficient and which will be outlined further on will succeed in reducing the length of an attack from four to six days. At least such has been my experience in a number of cases, and I have called attention to it in a former paper published by me.* The method was found to be efficient in both children and adults.

When zona attacks young children the process differs somewhat in its evolution from the same disease occurring in adults. As a rule, it is not preceded by neuralgia, and the younger the child the less complaint there

* *St. Louis Medical and Surgical Journal*, August, 1896.

is on that score. This cannot be explained in any other way but that which has been adopted to account for the fact that infants suffer less pain and its after-effects are shorter, in an operation, than in the case of adults. The only rational explanation which has been given for this fact is that

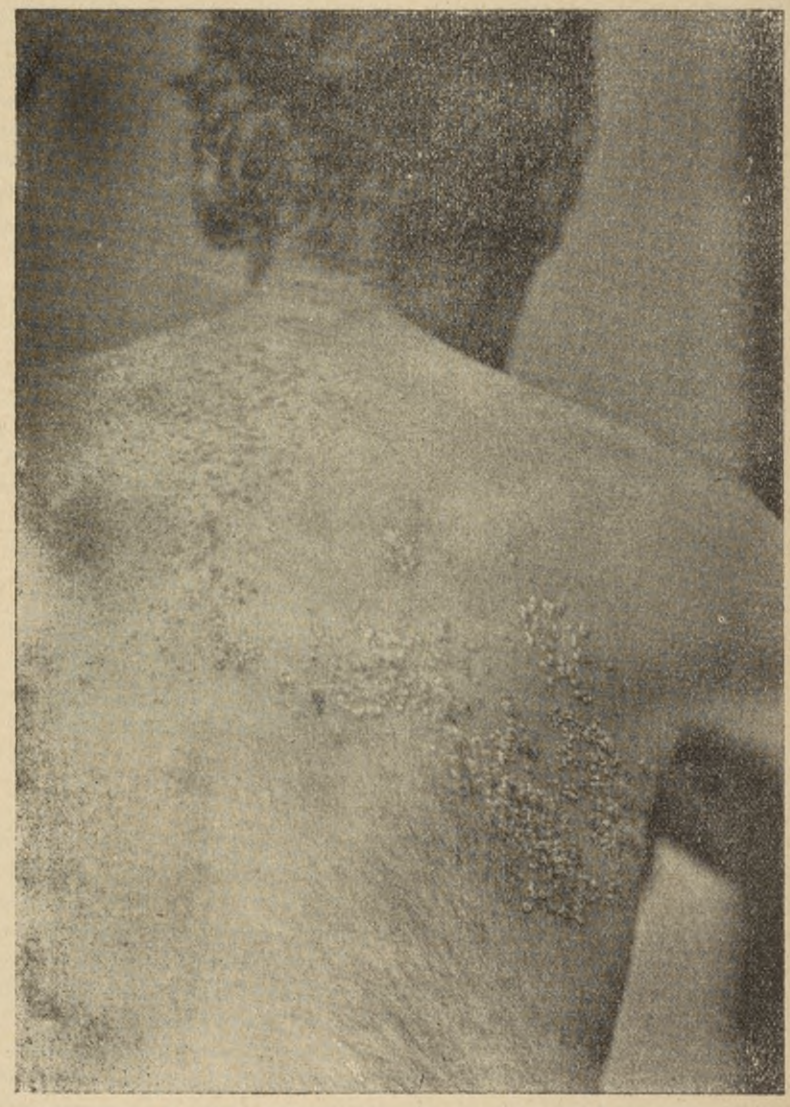

FIG. 2. Zona of Back.

the nerves and nerve centers are not as well developed; in other words, they are still in the stage of development, and the higher nerve and brain centers are not in that receptive state which they assume later on in life. The functions of the being are purely vegetative, and all evidences of emotion are referable to interference with those functions, with the possible

exception of pain due to trauma, and this is of comparatively short duration. On the other hand, when zona occurs in young children there is apt to be quite a marked elevation of temperature. This is known as zosterian fever, and is directly due to the disease, which is, no doubt, an irritation of the nerve centers. It occasionally becomes alarming, and should be combated with antipyretics such as are not heart-depressant, for the heart is also apt to suffer from some transitory functional disturbance more alarming from an apparent standpoint than from a real one.

The localities attacked by the eruption may be said to embrace the entire integument. The lumbar region and the thorax are most frequently attacked. Thus, we have zona pectoralis, zona dorsalis, as shown in Figure 2, in which it can be plainly seen that two spinal nerves are impli-

FIG. 3. Zona of Leg.

cated. Zoster lumbalis is also a favorite site, and the case shown in Figure 1 was of this variety. The sides of the chest, about the eighth or ninth intercostal nerves, is the most frequently implicated region. I have had occasion to note the eruption over those portions corresponding to the musculo-spiral nerve, the distribution not only mapping out very distinctly the nerve, but its branches. Zona brachialis is not seen very often. When it does occur, it is very apt to implicate the entire arm from the axilla to the flexure of the wrist. Zona cruralis is more often seen, and it is not unusual to see it distributed from the points of origin of the crural plexus down over the thigh and leg, the lesions being very disseminate.

An example of this form is shown in Figure 3, the lesions below the knee being younger in point of appearance than those above. The most severe form of zona is, beyond all doubt, that which is localized over the area supplied by the first branch of the fifth cranial nerve. This constitutes zoster ophthalmicus, and it is not only the most severe in its subjective symptoms, but is also very apt to be of a severely destructive character. A vesicle developing on the cornea is very prone to lead to perforation, with all which such a condition implies. It is for this reason that most energetic measures should be employed, as the loss of sight in one eye is always a contingency which should be guarded against. It is also for this reason that zona should be recognized quite early, as treatment may be inaugurated earlier and a disaster to eyesight much more easily averted.

The pathology of this disease has been very thoroughly worked up, although there are yet some lacunæ to be filled. The exact demonstration of the anatomo-pathological origin of zona must be credited to Bærensprung, who discovered changes in the cutaneous nerves and spinal ganglia.* But, as Leloir very justly observes,† cases occur in which neither the nerve trunks nor the ganglia are affected, and in which, manifestly, the cutaneous terminal filaments suffer. At all events, all writers and investigators are of the common opinion that there are organic changes in the nerves or spinal ganglia, or both, and that the cutaneous eruption is simply a reflex symptom of this condition, just as all herpetic eruptions are indications of some deeper neurotic diseased state, whose exact nature must be determined and eliminated before any decided and permanent relief can be hoped for.

An interesting question in connection with zona is the consideration of what causes it. Upon this problem there exist, in general, two opinions, and treatment accordingly varies. One opinion, which is supported by very respectable authority, is that the cause is purely parasitic. Microorganisms cause the trouble and the disease originates from without; or, in other words, is purely extrinsic. The theory which I am inclined to favor is that of the intrinsic origin. Experimental inoculations have failed, in my hands, to reproduce the eruption. On the other hand, I have been able to trace the inception of the trouble to a cold, exposure to air, being chilled, getting the clothing wet and thus reacting on the cutaneous surface, a chill being marked; mental emotions, such as anger, a fright, etc. In all, some nervous phenomenon could be made out and the relations of cause and effect appeared very plain. On the other hand, I have seen a zona-form eruption appear as a result of the intoxication produced by Fowler's solution. No neuralgic pains were apparent, but in all other respects it was a typical zona in each case. In connection with this part of the subject it may not be uninteresting to mention the fact that it has been, and still is to some extent, a popular belief, supported by medical authority, that one attack of the disease confers immunity against subsequent attacks. Very good evidence has gone to show that this is a fallacy, and quite a large number of individuals have been reported (orally) as having suffered successive attacks, one as often as once a month, showing that this is far from being an unusual occurrence.

**Annalen der Charite.* Volume XII. Berlin, 1868.

†Recherches Cliniques et Anatomo-Pathologiques sur les Affections Cutanées d'origine Nerveuse. Paris 1882, p. 153, *et seq.*

The treatment of zona should be both general and local. The prodromic symptoms should be treated by some nerve sedative, but cases rarely apply at this early stage for treatment, a belladonna or mustard plaster or some similar treatment being employed by the patient, who considers it an unimportant neuralgia. It is when the disease is developed, when the cutaneous lesions appear, that the pains are most marked. Here it is that energetic employment of remedies must be carried out. Phosphide of zinc, in one-third grain doses, has been recommended, the dose indicated being given four times daily, but it does not seem to be adequate to the cases. A good pill is the Asiatic, made as follows:

℞ Acidi arseniosi ..... gr. i
Pulv. piperis nigris ..... ʒ i
Ext. gentianæ ..... q. s.
M. Ft. pil. No. 30. Sig.—One pill after each meal.

This is superior to Fowler's solution, as it produces no untoward symptoms. If there be much pain at night, opium acts as the best sedative.

Locally, the treatment may be summed up in two words—protection and anodynes. A powder composed as follows is good:

℞ Pulv. camphoræ ..... ʒ ss
Talc. veneti
Cretæ preparat ..... aa ʒ j M.

But pure campho-phénique powder is much better. Whichever is used, it should be freely dusted on the affected part, and the whole covered with cotton batting. Should the local pain be very intense, it will be found advantageous to apply a four per cent. solution of cocaine muriate before the use of the dressing. Various anodyne solutions have been recommended, such as aqueous solutions of carbolic acid, bichloride of mercury and tincture of opium. The calamine and zinc lotion has been applied, but powders will be found to act much more satisfactorily. But whatever application is determined on, it should never be forgotten that the use of a cotton dressing is of the utmost importance. It protects the blebs and vesicles from being broken, and thus prevents the formation of chronic, ill-conditioned ulcers which will otherwise result and leave marked scars to demonstrate their former presence.

The prognosis of zona should always be a good one. The majority of authors give the average duration of the disease as two or three weeks. By using the treatment outlined above (arsenic pill and campho-phénique powder), this will be shortened to from four to six days, a circumstance which will be highly appreciated by patients.