THE SCAPHOID SCAPULA SYNDROME; ITS CONNECTION WITH SYPHILIS IN THE ASCENDANTS.

BY

WILLIAM W. GRAVES, M. D., of St. Louis,
Assistant Professor of Neurology in the St. Louis University School of Medicine.

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THE SCAPHOID SCAPULA SYNDROME; ITS CONNECTION WITH SYPHILIS IN THE ASCENDANTS.

By William W. Graves, M. D., of St. Louis, Assistant Professor of Neurology in the St. Louis University School of Medicine.

My observations have shown the scaphoid scapula to have far-reaching significance in the problems of heredity; to have unmistakable clinical significance and to be an anatomical entity. My studies of skeletal, embryo and monster scapulae have shown that the scaphoid scapula, as a type, differs from the average scapula of the human race in several anatomical particulars, chief among which is that the vertebral border below the scapular spine is more or less concave—hence the name.¹ (Fig. 1.)

¹The Scaphoid Scapula, a Frequent Anomaly in Development of Hereditary, Clinical and Anatomical Significance, Medical Record, May 21st, 1910.
Observing this type of scapula for the first time in September, 1906, in a seven-year-old epileptic boy, and later in his younger brother and sister, and in his mother, I have noted it many times since then, in the course of routine physical examinations. My observations warrant the prediction that studies by others will verify and establish the relative frequency of this anomaly in the population of cultured and civilized countries, and its very great frequency among backward and defective children, among epileptics, among the insane and among the so-called incorrigible and criminal classes.

Observing when the scaphoid scapula is found to a rather marked degree it is almost invariably associated with other anomalies, either physical or psychical or both, I have thought of it and now consider it merely one manifestation of some disturbing factor affecting the whole organism in its earliest development. I have found that it occurs in whole families, that it is transmitted from parent to child and so on through several generations, and that it is present in a varying degree in a large percentage of our population. The frequent occurrence of the scaphoid scapula in all branches of society seems to postulate a common cause and one sufficiently potent to modify the development of the growing organism from its very foundations.

From these observations and considerations and from my anatomical studies, I came early to the conclusions: (a) that no assumed circumstance in the life of the individual after his birth could give him the scaphoid scapula; (b) that its occurrence could only be accounted for by the assumption of some abnormal circumstance—some disturbing factor operating in the parents or in the more remote ascendants. Searching for the nature of the disturbing factor in certain individuals who have scaphoid scapulae, I have found in them, in addition to disharmony in physical and mental development, definite physical signs, first and foremost of which is the presence of arterial changes, sclerotic changes, which we all recognize as keeping pace with advancing years after the fortieth year of life. But in certain individuals having scaphoid scapulae, such changes appear much earlier than in average individuals, in some are discernible by the ordinary methods of clinical investigation as early as the fourth and as a rule as early as the tenth year of life and in older individuals to a degree out of all proportion to their years. In such individuals I have also found with great frequency an abnormal degree of lymph gland palpability and the histories of catarrhal affections developing in early childhood and persisting for many years. During the earlier periods of life, many of these individuals have adenoids, not a few develop simple enlargement of the thyroid gland and some of them have nocturnal incontinence. Most of these clinical signs and conditions, as well as some others which I have learned to consider correlations of the scaphoid scapula, have been considered at some length in a recent article.*


—2—
Aside from the chief correlation of the scaphoid type of scapula, namely, the deviating characteristics of the whole individual, the most constant, and, to my mind, the next in importance in certain of these is the presence of arteriosclerosis at unusually early periods of life, and in older individuals to a degree out of all proportion to their years. It was my recognition of early vasculosclerotic changes in certain individuals having scaphoid scapulae which ultimately led me to the determination of one disturbing factor underlying the origin of this anomaly. Of the various causes, any one of which may so operate as to engender arterial changes in the individual, alcoholic and metallic poisons are considered pre-eminent. So far as I know, no one of these causes alone so affects the individual as to bring about even a tendency to arterial degenerations in his offspring. Furthermore, the conditions with which the scaphoid scapula is frequently found to be associated and its occurrence in all branches of society readily exclude any one of these factors as being the underlying cause.

There is but one disease known to me which permeates all branches of society; which may be transmitted from parent to child; which causes vasculosclerotic changes in the affected individual, as well as in his progeny, and that disease is syphilis. Syphilis is preeminently a vascular disease. Its pathology centers about its vascular manifestations. Whether the spirochaeta pallida so affects the vessels in the growing embryo as to bring about disharmony in development, of which the scaphoid scapula may be only one manifestation, or whether this and other manifestations may be the result of its toxic products upon the germ plasm, I do not know. But that there is a strong connection between the occurrence of the scaphoid scapula in the offspring and syphilis in the parents or in the more remote ascendants, I have in my studies been able to demonstrate beyond all question.

Permit me to direct your attention to some known but not always appreciated facts which from the accumulated study of syphilis may be considered established, and to some personal observations bearing upon this connection. Of the very great number of our population who contract syphilis, only a few suffer from syphilis of the nervous system, tabes and general paresis. Nevertheless, syphilis of the nervous system, tabes and general paresis are believed by many observers to be becoming more frequent in our population, the latter making up an increasing percentage of the inmates of our hospitals for the insane. It is a matter of common observation that those who suffer from syphilis of the nervous system, tabes and general paresis are, as a rule, free from decided evidence of a former luetic infection as pertaining to the bones, skin and mucous surfaces. But that they frequently show a degree of vasculosclerotic changes beyond their years is not sufficiently recognized.

It is a matter of common observation that the malignant forms of syphilis, particularly as affecting the skin, bones and mucous surfaces are becoming yearly less frequent. My personal observations indicate that the
decided surface manifestations, as well as the malignant forms of acquired syphilis, are relatively infrequent in individuals having scaphoid scapula, and that in individuals suffering from tabes, general paresis, and syphilis of the nervous system, scaphoid scapula are frequently found.

May not the infrequency of malignant syphilis indicate that our population is acquiring a relative immunity from such forms because of the general syphilization of the race? May it not be that the gain in the infrequency of the surface manifestations of syphilis is more than balanced by the increased frequency of its later forms as affecting the deeper structures of the body and especially the nervous system? May not the presence of the scaphoid scapula in individuals suffering from the later and deeper manifestations of syphilis be an indication of its origin as well as of the individual’s acquired relative immunity transmitted to him either from his parents or through them from his more remote ancestors?

Such observations, however, could never establish the origin of the scaphoid scapula, but they do seem to justify an inference of a strong connection between the occurrence of the scaphoid scapula in the offspring and syphilis in the ascendants. Now if this inference be well founded, we should find proof of it in our studies of the offspring of syphilitic parents; and we should expect to find proof not only in the study of such individuals as show the heretofore recognized signs of congenital syphilis, but in those we have heretofore considered free from every sign of hereditary “taint.”

Our studies must not only apply to the individuals known to be of syphilitic parentage, but they must also apply to individuals coming before us in whom what may hereafter be called the scaphoid scapula syndrome is found. Not only must such individuals, their parents and more remote ascendants be studied from every angle, but the study must be made a comparative one. The individual presenting this syndrome must be compared with each member of his generation, with his parents, with his near relatives, when possible, with his more remote ancestors, and then the members of his generation must be compared, as far as possible, with other generations wherein syphilis has not existed in the parents.

Finally, all known facts in pathology bearing upon the recognition of congenital syphilis should be brought to bear in the study of individuals coming to section having scaphoid scapula, and especially upon the products of abortion. In such study there must be included the search for the spirochaeta pallida and the determination of the vertebral borders in those embryos sufficiently advanced to permit of such a determination, and when possible, an attempt should be made to correlate the pathologic and bacteriologic findings with clinical data.

The heretofore recognized signs of congenital and so-called hereditary syphilis are relatively infrequent among the living children of syphilitic parentage. When these signs are absent, we have considered such children healthy or at least free from all effects of syphilis and we have
pointed to them as living examples of the triumphs of our therapy in the parents. Systematic and comparative studies of all individuals born of syphilitic parents will prove to anyone, who will take the time to make such studies, the fallacy of such conclusions. It is upon the evidence afforded by such studies that the final proof that syphilis is one etiological factor in the genetics of the scaphoid scapula must rest. Such studies on the part of many will, undoubtedly, broaden our conceptions concerning the evil effects of syphilis upon the offspring and at the same time determine the clinical worth of the scaphoid scapula syndrome.

Let us for the moment direct our attention to a composite picture of some of the physical and mental characteristics of individuals born of syphilitic parents and of their descendants and to some of the conditions and diseases to which my studies of such individuals have shown them to be peculiarly susceptible. Confining our studies in the beginning to individuals of the second generation, we shall find many of these to be of retrograding and deviating types. As a rule, these individuals will show, when studied in a comparative way, deviation in physical or mental characteristics and frequently in both.

Among such progeny with relative frequency will be found many of the heretofore recognized anatomic, physiologic, psychic and psycho-neurotic stigmata and with great frequency the scaphoid scapula with its chief correlations in varying degrees. Such individuals are usually undersized, have sluggish attitudes, meagre musculature and are strikingly lacking in the harmonies of physical development. They range in stature from dwarfs to giants, but whether the one or the other or merely undersized, disharmony characterizes their physical development. Many of them, apparently physically normal at birth, in their later development show retardation, or grow by fits and starts until near, either before or after, the usual age of puberty when they shoot up like weeds or forever remain stunted—blighted.

With the beginning of mental development, such progeny are either backward and remain so, or they show, and this is the rule, precocity. If disharmony characterizes their physical development, it is especially true of their mental development. They seem to have no childhood and to jump from the cradle to adolescence. “My children are all old in their ways” is a frequent expression of certain observing mothers and they may add “They are almost always ailing:” or the unobserving mothers (ignorance, mother-love and pride makes them so) may proudly say “My children are all healthy.” Indeed, physicians usually consider such children healthy or at least free from syphilitic blight in the absence of “snuffles,” eruption of the skin and mucous surfaces, bone and joint affections, Hutchinson’s teeth, interstitial keratitis and deafness without otitis. Children of the second generation are, as a rule, older than their years. They are often ailing and are rarely very healthy. To appreciate
the truth of these assertions, we must, as physicians, study the individuals of families as well as the histories of individuals of families.

While idiocy, imbecility and backwardness are found in the second generation, such mental states are by no means common. My studies of individuals of the second generation show precocious mental development to be the rule. Not only do such children appear like little old men and women in the seriousness of their ways and actions, their preference for books rather than play and for the society of their seniors rather than their kind; but, as individuals, their facial expression is lacking in the freshness of infancy, childhood and youth and they ever afterward appear much older than their years.

Many of them develop sexual instincts long before puberty and these instincts are often gratified by masturbation, sexual intercourse or otherwise. Strenuosity and intensity characterize many of these individuals and before or after adolescence such mental proclivities, associated with an inherently weak constitution, may sooner or later lead to a “break” and they make up a large percentage of the cases commonly classified as neurasthenia, hysteria and dementia praecox. Many cases of epilepsy, chorea minor and tic are to be found among individuals of the second and later generations, but especially in the second, and I have been greatly impressed by the unusual frequency of tuberculosis in these generations.

If the antenatal mortality of syphilitic progeny is so great, it is but reasonable to believe that the influences underlying it are still operative in the living. If not the disease itself, its blighting influence as manifested by disharmony in physical or mental development or both, by inability to stand the stress and strain of ordinary existence, by lowered general resistance and by degenerative and involutinal changes. Such progeny are truly abiotic; hence the instability of their natures, their proneness to so-called functional nervous and psychical disturbance, to degenerative and involutional changes, to tuberculosis and other diseases. Not a few individuals of the second generation, despite their handicap in physical and mental endowments, learning to adjust themselves to their environment lead successful, useful, and even brilliant lives, though they rarely live out their expectancy in consequence of their abiotic natures.

In my first communication* I referred to vasculosclerotic changes as a sort of connecting thread between the syphilitic and his progeny. In my studies of many individuals and families, upon which this communication is based, a degree of such changes out of all proportion to their years is the one preeminent clinical fact discernible in individuals who have acquired syphilis and it is the one significant clinical fact discernible in their children and in their children’s children. It is probably one cause of the frightful ante-natal and post-natal mortality among such progeny.

*The Scaphoid Scapula, a Frequent Anomaly in Development of Hereditary, Clinical and Anatomical Significance, Medical Record, May 21st, 1910.
and probably the main cause of their abiotic natures leading to lessened expectancy in life and to their proneness to disease, to degenerative and involutional changes, to the so-called functional nervous and psychical disorders and the underlying cause of tuberculosis in them—for is not the blood the life thereof?

Since we have been able to trace vasculosclerotic changes as a sort of connecting thread between the syphilitic and his progeny, our ability to recognize such changes is of prime importance in establishing one cause of the scaphoid scapula. So constant are these, even by the ordinary methods of clinical investigation, that they will be rarely missed in syphilitics two or more years after infection or in their progeny after the tenth year of life. As an aid to the usual methods in detecting arteriosclerosis, permit me to call your attention to Luedde’s modification of the Zapski Binocular Corneal Microscope with which we may readily see the blood coursing through the conjunctival vessels, and when present the thickening and aneurismal dilatations of their walls. The almost constancy of vasculosclerotic changes and our ability to recognize them so early in life in individuals of the second generation warrant the deduction that these changes begin during development in utero. In other words, that many of such individuals are born with a degree of arteriosclerosis. Such in brief have been the observations, the considerations and the manner of research which finally led me to the conclusion that syphilis is one cause of the scaphoid scapula syndrome and which enabled me to formulate certain laws (Medical Record, May 21st, 1910), which seem to govern the origin and transmission of the scaphoid scapula.

In conclusion, permit me to say that I consider my deductions by no means final. That there may be other causes than syphilis which may so operate as to affect the germ plasm of parents, the nutrition or the development of the embryo and thus bring about the scaphoid scapula, other disharmonies in development, early arterial changes and other correlations seems possible. I have searched for these in vain. If investigation by others should lead to the verification of my findings and deductions and thus establish the connection between the scaphoid scapula in the offspring and syphilis in the ascendants, even in a few instances, the presence of this anomaly may serve as a clue to more than one medical mystery.

Before we may determine the significance of the scaphoid scapula syndrome in any individual, he must be studied from every angle and in a comparative way with the members of his own family and with average members of the community. With the use of modern refinements in clinical investigation; with the use of laboratory methods, merely to confirm and to control clinical deductions; with patient study of individuals and of the individuals of families on the part of many workers, the cause or causes, as well as the hereditary, clinical and pathological significance of this syndrome, may readily be determined.
My studies thus far warrant me in saying at this time that such research on the part of many workers will undoubtedly lead to more complete recognition of syphilis and of its blighting influence in the individual affected, in his children, and in his children’s children. Out of such recognition let us hope a sane prophylaxis may be developed, whereby much suffering which now comes to humanity from this insidious enemy of the human race may in succeeding generations pass away from the earth forever.

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