Research on Paravertebral Papule-Points and Pressation-Points and Related Subjects (Fourth Report)

Clinical Observation of Papules

by

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I Observation of Papules

A) Time of Appearance of Papules

By continual observation of the total daily quantity of urine of patients with various diseases, the writer has found that it usually decreases in amount to 500 or 600 c.c., in the advanced stages, sometimes even to 300 c.c. without noticeable edema or albuminuria, and then increases up to 2000 c.c., sometimes even to 3000 or 4000 c.c. (probably due to cerebral diuresis) in the period of convalescence, and becomes normal by the time of recovery. This is true even in the case of cardiac neurosis.

This course of quantitative change of the urine is similar to that accompanying infectious diseases. Thus it may be concluded that focal infection and the ready or previous state of what pathologists call subacute sepsis (clinically called subacute or chronic rheumatism), are much commoner in clinical practice than has been generally believed.

The writer's papules appear in the period when the quantity of urine increases; that is, the convalescent period of these subacute septic cases. In acute septic cases such as typhoid fever, dysentery, influenza and other diseases associated with high fever, miliaria crystallina rather than papules occur in this period.

B) Frequency of Papules

In general the frequency of the occurrence of papules on the patient's skin is about as high as that of the pressation-points in their muscles. The writer does not therefore consider them to be exclusively associated with tuberculosis, but ascribes more importance to their relation with pneumo-, staphylo- and strept-cocci and viruses causing mixed infection. This view is confirmed by the study of tubercular infection by Prof. *T. Donomae* and *Y. Kawamori*.

C) Difference between Subacute and Chronic Diseases as to the Papules

In the majority of subacute cases these papules are erythematous, but in chronic diseases e. g. tuberculosis, they are, with few exceptions, pale and cold in appearance.

D) Appearance of Papules and Pressation-Points as Clue for Prognosis.

Usually these papules do not appear in those cases in which pressation-points (points painful under pressure) are not found throughout the whole course of the disease. Appearance of papules and accordingly existence of pressation-points indicate favorable prognosis of the patient and their absence indicates either a very advanced case or, on the contrary, a normal state of health.

E) The Sites of Papules are Maximal Reactive Points of the Skin

The site of the papule coincide with such organic changes of skin as lentigo, angioma etc., so they are believed to have some connection with the peripheral endings of autonomic, especially vasomotoric nerves, and consequently to be the P.M. (maximal reactive point) of the skin in the region.

Further investigation must be made about the relationship, if any, of these eruption with sebaceous and perspiratory glands or hair follicles. But at any rate more importance must be attached to the location of the eruptions than to their character and classification. Therefore, the writer decided to call these P.M. "papule-points," naming after the eruption which was the first step of this discovery.

F) Proposition for Three-Dimensional Observation of the Human Body

These papules provide objective evidence of existence of the writer's pressation-points, as coincidentally herpes zoster does for the hypersensitive zone described by Dr. *Head*.

The former indicates the segmental changes of the viscerosensory reflex just as the latter does, but unlike herpes zoster they sometimes appear symmetrically on the right and left sides (cf. Fig. I), and occasionally they show regular vertical arrangement in lines parallel to the median line. Therefore, the maximal point should be looked for not only in the direction of the segmental zone but over the whole surface of the body. Prof. *H. Matsunaga* hinted at the desirability of three-dimensional observation of the

body as a result of his study of pressation-points, but as a result of the study of the papules the writer would definitely propose that observation of the body be always conducted in three dimensions (not only ventro-dorsally and laterally but also cranio-caudally).

Fig. I. Spinal Irritation

T. K., ♂, 19 years old, 12/V '50.

The symmetrical area of papules (mainly on sub-scapular area) and erythematous macules (few on median line) are indicated by white lines.

Fig. I

Lordose and vertebral pressation-point: Th. V(+)
VI(+)
VII(-)

Vertebral p.p. > r. paravertebral p.p. > l. paravertebral p.p.

1) First, to determine disharmony of vegetative nerve, observation of both sides is always required, considering segmentally a cycle of pain through the right and left pathway of viscerosensory reflex. Thus he wants to emphasize the importance of this theory in explaining the exceptional disagreement on the right and left side between paravertebral pressation-points and visceral disorder.

Fig. II Radial Paralysis

J. M., ♂, 38 years old, 7/XII '49.

The Anesthetic area is indicated with black lines.

Fig. II A

Fig. II B

In this connection the example (illustrated in Fig. II A and B) of radial paralysis, accompanied with anesthesia, is very interesting and full of implications. In this case the papules are found in a dense group on the right shoulder and from thence proceed centrifugally on the right upper extremity corresponding to the distribution of the radial nerve in a somewhat similar manner as the "Keiraku" (a sort of pathway connecting several moxa-points serially), and at the same time, strange to say, as the motor irritating points. Further, on the anesthetized area the papules themselves are not red colored at all, but the rosy-rings surrounding the papules show striking contrast with them, being more intensely red than the rings located on healthy skin. Moreover the papules on the opposite upper extremity are less inflammatory than that on the paralysed side.

On the contrary, in a case of hemiplegia following apoplexy, the same series of papules were found on the healthy upper extremity, but not on the paralysed one at all.

The foregoing study has convinced the writer that the papule-points are the points appropriate for treatment with electrical mechanism, moxibustion, acupuncture etc., in cases of either central or peripheral radial paralysis with anesthesia. Thus it may be concluded that these papule-points are not only peripheral endings of vegetative vaso-motoric nerves, but also those of somatic sensory nerves to which the motoric nerve is related indirectly.

Fig. III Cardiac Neurosis, Convalescent Period.

S. K., ♀, 32 years old, 3/X '50.

The patient suffered from palpitation for one month and she has recovered from it lately.

On the day before this examination she complained of epigastric pain; at that time small papules (indicated by white rings) and a pressation-point (in-

licated by a black ring) appeared as shown in the figure.

Fig. III

123456789101112
 Fujita's p.p.p. 5/IX 1. (3)t.i.s.
 3/X r. (6) t.i.s.
 1. p.m.(11)t.i.s.

2) Secondly, six lines on the back—the median line, and the lines about 2.5 cm., 5 cm., 10 cm., 15 cm., 20 cm. from it (the dorsal pressation-point discovered by the writer in appendicitis is on one of them)—were determined and also similar sagittal lines were observed on the ventral side (cf. Fig. III). But these lines were not so regular and segmental as the paravertebral line and Mackenzie's spinous pressation-points along the median line. It is interesting to observe sagittally the transversal P. M. of Head's dermatome which are situated mainly on the scapular line, and to note that these six lines coincide almost always with the "Keiraku" which was re-investigated recently by Y. Nagahama and M. Maruyama. At any rate, comparison of these lines with the orientation lines on the surface of the body, may serve as a clue for explaining the complicated "Keiraku."

Continual observation of the progress of papules and pressation-points shows the existence of ascending and descending varieties of catarrh of the body. This does not mean that inflammation ascends or descends within the limit of a system or a tissue, but that it goes sometimes upward and sometimes downward, involving different organs one after another. The typical example given in the writer's third report is one of descending catarrh.

3) Finally a study of the trasversal distribution of the papules, as well as of herpes zoster may throw

light on the question whether a particular part of the skin is governed by a number of adjacent segments.

II Time of Appearance of Erythema and Erythematous Macule

In 10 years of clinical practice the writer had noticed with interest erythema on the upper part of sternum in cardiac neurosis which disappeared instantly when the skin was cooled on undressing. Also during the study of papules, erythematous macules were often met with where papules were expected.

It is very interesting that Y. Nagahama and M. Maruyama found that skin changes such as erythema, erthematous macules and papules caused by "bites" of insects often coincided with moxa-points.

According to the writers investigation these erythema and erythematous macules appear in a comparatively early stage of acute septic fever, and in this stage both the eruption and pressation-points appear in the same viscerosensory segment. Therefore, by comparing Head's dermatome with the writer's pressation-points of the spleen the reason becomes clear for the appearance of roseola in typhoid fever on the upper abdomen almost simultaneously with the enlargement of the spleen.

This fact applies to subacute sepsis as well, but in these latter cases every portion of the body is affected at different times, and therefore both macular and papular eruptions appear simultaneously on different regions of the body. But even then the papules, as a rule, appear later than erythema and erythematous macules, in the convalescent stage of the change at the affected part. Therefore the appearance of papules is not always simultaneous with that of the corresponding pressation-point. Continual observation of subacute sepsis shows that the papules appear some time after the pressation-points have vanished. This time lag brings about the apparent anomaly that when pressation-points and papules are observed at the same time clinically, they are located often in different segmental regions. These facts are illustrated in Fig. III.

In Fig. III the largest papule is located on the 3rd thoracic segment, where the maximal pressation-point was found one month ago, but has disappeared since; on the contrary, the maximal pressation-point at present is found at the height of the eleventh thoracic interspinous space, but its corresponding papule has not appeared yet. Viewed in this way the

pression-points and the papules coincide with clinical symptoms.

In short, in subacute septic diseases (e. g. rheumatism) as well as in acute septic ones (e. g. typhoid fever, small pox, etc.) the first allergical change of skin is erythema, then in the advanced stage of the disease appear erythematous macules accompanied with corresponding pain on pressure, and at last in the period of convalescence papular eruptions without corresponding pain on pressure. Moreover the slight organic changes such as pigmentation, leucoderma, pit, scar etc. (which sometimes remain at the same position after papules have been vanished) as well as lentigo and angioma, indicate a previous disorder either known or unperceived or locus minoris resistentiae of the patient.

In their lateral distribution, too, erythematous macules, and therefore papules, sometimes are located about 0.5 cm. to one side of the corresponding pression-point. This lateral discrepancy is related to the direction in which the nerve and blood-vessel run from deep-seated muscle (related to the pression-points) to the superficial skin (related to the papule-points), and is more frequently seen at the paravertebral points.

III Pathomorphological Research in the Field of Papules

These papules generally heal without leaving any trace, but sometimes produce slight organic changes of the skin such as pigmentation and scars. These changes appear on the same saggital line as such organic changes as lentigo, angioma etc. or on the line symmetrical to them with respect to the median line, and therefore, their location is to be considered as having some connection with that of lentigo, angioma etc.. Consequently, some organic changes analogous to the above-mentioned ones must exist in the internal organs corresponding to the particular location, in view of the fact of viscerocutaneous reflex or conversely by cutaneo-visceral reflex.

Whether these organic changes which correspond to the second stage of allergic change due to microbic infection have any connection with rheumatic nodules and nodular periarteritis recognized by pathologists is an interesting question.

Recently Prof. *T. Ishikawa* suggested that the papules studied by the writer might originate from Gl. Cutaneous (which performs both sensory and

motoric functions and is the site of allergic sensitiveness). In other words, he believes on pathological grounds that they develop from the neuro-angio-epithelial element.

Conclusion

The writer's papules vary greatly in quantity, quality, distribution and duration according to race, individual constitution and diseases. But they themselves are natural phenomena, and therefore, if the various parts of the skin associated with the writer's papules on the one hand and with moxa-papules on the other are studied in a comparative manner, with reference to their state of electrification, patho-histological aspect etc., much new information may be secured, especially after the research technique is improved. In this sense the writer's study is only in the preliminary stages.

At any rate, the papule-points have a close connection with the blood-vessel and its nerve, and their study is thought to throw light on the clinical application of Prof. *T. Ishikawa's* "Theory of Chemo-Receptoric Mechanism."

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陰壓作用下に於ける毛細血管の研究

第5報 毛細血管出血に就て

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緒 言

Müller¹⁾によれば毛細血管出血は毛細血管の病的な擴張によつて血管滲透性(per diapedesis)に起るもので、出血部は透過性の最も大なる毛細血管彎曲部であると言ふ。毛細血管に氏の所謂攣縮性弛緩性症候群²⁾を有する者は皮膚の到處で毛細血管出血を來し得るし、而もそれは毛細血管の弛緩性の部分に於て起る。又夜間に、即ち副交感神経緊張が血管擴張を結果してゐる時に、屢々見られると言ふ。

Cohnheim³⁾, Hagen⁴⁾等は毛細血管が強く擴張する時は白血球と共に赤血球も血管外へ游出する事を確認し、Baron & Chambers 等⁵⁾は醋酸或は針を以て蛙の毛細血管内皮細胞を刺戟する時、一時的に生ずる細胞間隙を通じて赤血球が血管外へ出る事を認めた。

以上の諸家は毛細血管出血が血管滲透性に起る事を報告したものであるが、Cutter & Marquardt⁶⁾は人の爪溝毛細血管の出血抵抗を検査し、その際毛細血管の斷裂が見られると言ふ。

毛細血管出血が血管破綻性に(per rhexin)起るか又は血管滲透性(per diapedesis)に起るかといふ問題は、興味あるところである。この問題に關聯するものとして腦溢血に就ての論議を一瞥するに、從來の動脈破綻説に賛

成するものには Hiller⁷⁾, Böhne⁸⁾, 木村, 松岡⁹⁾等があり、之に對し滲透性出血の説を支持するものに Rosenblath¹⁰⁾, Westphal¹¹⁾, Fischer-Wasels¹²⁾, Schwartz¹³⁾, 辻¹⁴⁾等があり、Stämmeler¹⁵⁾, Hueck¹⁶⁾, Lehoczy¹⁷⁾等は兩説を共に容認してゐる。然し乍らこれらの諸説に於ても特に毛細血管領域に於ける出血の様相を追求記載したものは尠く、次の如きものを見るに過ぎない。即ち Rosenblath¹⁰⁾は自家中毒性又は酵素様物質によつて毛細血管或は静脈が壊死に陥る爲に出血すると言ひ、Elkington¹⁸⁾は出血部位に毛細血管擴張症(Teleangioektasie)を認め、辻¹⁴⁾は腦の小静脈及び毛細血管の静脈脚に異常な擴張が存在して滲透性出血を來すと述べ、木村, 松岡⁹⁾は動脈破綻説を主張しつつも尙滲透性出血乃至毛細管出血の存在を認めてゐるが、彼等によれば30μ以下の血管にあつては破綻が存在してもその斷端を確認する事は困難であると言ふ。

著者は陰壓を人の指に作用せしめる際に、その爪溝毛細血管に起る出血の様相を詳細に觀察する事を得たので、茲にその成績を報告しようと思ふ。蓋し該部に於ける毛細血管の出血を實驗的に検査したものは前記 Cutter & Marquardt⁶⁾あるのみであり、著者の如き方法によつて時間的に追求したものは未だ文献に見ない處である。