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Re-Investigation of The Mechanism of Trilogy Imaging Characteristics on TTM in Cancer Patients

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Abstract- **According to Neuro-Endocrine-Immune theory, we have done research and tried to find possible explanations of the relationship of trilogy imaging characteristics of Thermal Texture Mapping (TTM) and patients with the malignancies, or the patients susceptible to malignancies. We performed another two experiments to study mechanism of trilogy imaging characteristics, however, the result was not as expected. We have to reconsider the relationship between 3 tumor platforms and hypothalamus-thyroid-pancreas. Is there any possible mechanism?**

Keywords **- Trilogy imaging, TTM , Tetralogy imaging, Autoimmune diseases, Abnormal thyroid function, Thermal imaging, Thermography.**

I. INTRODUCTION

Experiment 1: Study of correlation between thyroid function and abnormal heat foci in neck.
11 histology diagnosed cancer patients received TTM examination. Among them, 3 were gastric and colon-rectal cancer, 6 were breast cancer, 2 were lung cancer; 4 were male, 7 were female; aged 38-71 (mean 48). Trilogy imaging occurs in 9/11 (81.82%) cancer patients.
Thyroid examination was performed on the patients above by isotope scan. Thyroid function including T3, T4, FT3, FT4 was assayed at the same time.

Experiment 2: Correlation study of autoimmune diseases and trilogy imaging characteristics .
6 SLE patients were all female, aged 22-43 (mean 29). And no trilogy imaging was observed.
There is no relationship between the trilogy characteristics on TTM and the autoimmune disease. But these patients all received high dose corticoids, which may affect the results of TTM. The clinical data of previously untreated autoimmune disease patients will be collected for further research.

II. METHODOLOGY

Experiment 1: Correlation study of thyroid function and abnormal heat foci in neck of cancer patients
Clinical data: 11 histology diagnosed cancer patients received TTM examination on March, 2004. Among them, 3 were gastric and colon-rectal cancer, 6 were breast cancer, 2 were lung cancer; 4 were male, 7 were female; aged 38-71 (mean 48). Trilogy imaging occurs in 9/11(81.82%)cancer patients.
Method: Thyroid examination was performed on the patients above by isotope scan. Thyroid function including T3, T4, FT3, FT4 was assayed at the same time.

Experiment 2: Study of correlation between autoimmune diseases and trilogy imaging of TTM
Clinical data: Total 6 clear diagnosed SLE patients (all female aged 22-43 (mean 29)) received TTM examination on March 2004.
Method: Using TTM (TCI-I type) to identify if the trilogy characteristics were observed from SLE patients(Non cancer patient).

III. RESULTS

Experiment 1:
Results: Chi-square test see table I

TABLE 1
TTM AND CHI-SQUARE TEST RESULTS

RESULTS	TTM (+)	TTM (-)
Abnormal thyroid function (↑or ↓)	1	0
Normal thyroid function	8	2

Correlation analysis of cross table data:
Ho: no correlation between two factors
H1: correlation relationship between two factors
α=0.0500
Correlation rate：
r =0.1491
rn=-0.4545
Exact Fisher P test
P (left side)=1.00000000
P (right side)=0.81818182
P (both side)=1.00000000

Statistical results: P=1.0000,H0 is not refused according to **α** =0.0500. Abnormal heat foci might not be related to thyroid function.

Experiment 2:
Results: .
There is no relationship between the trilogy characteristics of TTM on the autoimmune disease (See table 2). But these

patients all received high dose corticoids, which may affect the results of TTM. The clinical data of previously untreated autoimmune disease patients will be collected for further research.

TABLE 2
6 SLE PATIENTS TTM TRILOGY IMAGEING RESULTS

RESULTS	TTM (+)	TTM (-)
6 SLE PATIENTS	0	6

IV. DISCUSSION

Many studies have proved the effect of cytokines on neurohypothalamus-endocrine system, our study found that the abnormal heat foci in neck may not originate from the thyroid, and the foci in abdomen may not originate from pancreas.

In addition, we have studied the manifestation of TTM trilogy imaging in cancer patients, and discovered that, in part of the patients, the abnormal heat foci present in a node form and concatenate. This phenomenon also occurs in the unfixed site in chest.

According to the correspondent anatomic site of abnormal heat foci on TTM, we reviewed many references and propose a new possible hypothesis: a tetralogy imaging that originates from hypothalamus and cervical, thoracic and abdominal sympathetic ganglia, based on 1)According to Neuro-Endocrine-Immune theory, hypothalamus can regulate sympathetic and parasympathetic nerve (the highest center of vegetable nerve), besides the modulation of the secretion of hormones of pituitary gland. 2)Cytokines can activate hypothalamus platform, especially hypothalamus-pituitary body-adrenal gland (HPA) axis (through IL-1) . 3)Sympathetic trunk was distributed both on neck and along the spine: cervical sympathetic trunk was localized posterior to cervical vessel sheath, anterior to transverse process; thoracic and lumbar sympathetic ganglia was localized along the spine. They are all activated by norepinephrine and other transmitters such as neuropeptide. Norepinephrine is mainly released from sympathetic nerve end; it plays an important role on integrating the neuro-endocrine function and visceral automatic nerve reaction. 4)Correspondence of the sites of 4 abnormal heat foci and the sites of hypothalamus, cervical sympathetic trunk and thoracic, lumbar sympathetic ganglia.

These implies that TTM signal abnormality was caused by hypothalamus, cervical sympathetic trunk and thoracic and lumbar sympathetic ganglia dysfunction, rather than hypothalamus-thyroid gland-pancreas platform we before know. And this hypothesis is in accord with the neuro-endocrine-immune theory. In the immune mechanism, cytokines can affect the hypothalamus, and play another important role, regulation of autonomic nervous function besides effecting that of the endocrine. And then, sympathetic trunk function is changed, manifesting of signal abnormality of malignancy platform on TTM. In animal models, immune response was first triggered by no toxic, no infectant and no newborn antigen, the results showed that endocrine system, automatic nerve system and catecholamine shifting rate was changed after the activation of immune system.

V. CONCLUSION

We believe that tetralogy imaging may be more reasonable according to the nature of the cancer, which is caused by the activation of hypothalamus, cervical, thoracic and abdominal sympathetic ganglia. Further research is needed for more accurate validation and quantification .

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