

MAIN TENDENCIES OF NON-LINEAR TECHNOLOGY DEVELOPMENT

Vladimir Nesterov

The first decade of the new century was marked by considerable extension of NLS-technology's diagnostic features, first of all by means of new technologies introduction and using the ultra-high performance computers. Pragmatic market of 3D-visualizing diagnostic technologies will be formed gradually by means of harmless non-ionizing methods, allowing to fulfill multiple dynamic researches, i.e. NLS-technologies undoubtedly will come to the fore. More and more clinical therapists realize the necessity to master NLS-diagnostic equipment, because the needs for properly educated experts in this field are obvious. However, among traditional medical specialists, there is a tendency to pay more attention to researches with computed X-ray imaging and magnetic resonance imaging. That is why the NLS-technologies, unfortunately, are still hidden among more orthodox methods of diagnostics. Clinicians will be ready (in many aspects are already ready) to improve their diagnostic possibilities by using the NLS-technology, often without X-CT, MRI and radionuclide methods. Nevertheless, only in strategic partnership of NLS-diagnostics experts, radiologists and clinicians may be found a key to optimal diagnostic and healing application of this, in all senses, original and efficient medical technology.

The article presents the main principles of medical diagnostics using the NLS-method. It contains generalized evaluation of the NLS-method's diagnostic possibilities in revealing various organs' pathologies and gives an analysis of this method development prospects. *Acta Medica Medianae 2013;52(2):41-44.*

Key words: *medicine, medical equipment, healthcare administration, quantum medicine, vibration and complementary medicine, bioresonance medicine*

The Institute of Practical Psychophysics, Omsk, Russia

Contact: Vladimir Nesterov
The Institute of Practical Psychophysics,
2, 1st Proizvodstvennaya str., 644001, Omsk, Russia
E-mail: ipp.info@bk.ru

Main tendencies of non-linear technology development

Being a creator and having more than 20 years of experience in work with non-linear (NLS) technologies, the author expresses his opinion regarding the main tendencies of its development. The first decade of the new century was marked by considerable extension of NLS-technology's diagnostic features, first of all by means of new technologies introduction and using the ultra-high performance computers. Such concepts as NLS-ultramicroscopy, non-linear spectral and entropic analysis have become customary in many clinics. Together with development of inexpensive portable digital NLS-systems, the scope of their application will be extended also; improvement in communication means that capabilities will provide transmission of live pictures to medical consulting centers at any place on Earth. Pragmatic market of 3D-visualizing diagnostic technologies will be formed gradually by means of harmless non-ionizing methods, allowing to fulfill multiple dynamic researches, i.e. NLS-technologies undoubtedly will come to the fore (1).

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Non-linear (NLS) diagnostics, based on a new physics of quantum-entropic interaction, allows acquiring the maximum information about gravity, maturity and intensity of functional changes in the human organism during medical check-up. In the majority of cases, the application of this technology has a principle meaning for diagnosing and therefore for choosing the proper treatment course. Thereby, developing of this method has become a great improvement in the diagnostic medicine. Using the principle of NLS-diagnostics and taking as the basis the researches of academician Svyatoslav Pavlovich Nesterov, who invented the underlying trigger sensor, at the beginning of 90's of the last century, the Institute of Practical Psychophysics (IPP) started with design of the NLS-diagnostics systems. Clinical trials of the first systems were carried out in the period from 1992 to 1999. The beginning of the new century was marked with quick growth of commercial manufacturing of systems and significant improvement of acquired results' quality (1,2).

Non-linear diagnostics method is still being developed. Diagnostic methods progress so quickly that system's versions update every six months. Development of NLS-technologies cannot be separated from the main problems of medicine – reasons of diseases' development, their early diagnostics and objectivization of treatment efficiency. Despite decreasing of cardiovascular diseases' mortality rate (according to the

world statistics), the situation around "epidemic no. 1" still remains unfavorable. Constant growth of oncological and hereditary pathologies is being registered. In the modern world, protective, less invasive, bloodless surgery goes together with therapy which becomes more and more "aggressive". And if we take into account that our civilization is technogenic, it is quite possible that humanity will face new and unknown diseases in the future. With this background, the development of diagnostics methods goes on and NLS-researches should be one of the most significant among them (3).

To achieve significant progress in the quality of NLS pictures, considerable increase in amount and accuracy of contained information is required. It is the increase in amount and accuracy of diagnostic information in NLS picture that is the main objective of modern technologies' development. Nowadays, new approaches to acquiring and analysis of information can be divided into those related to visualization in three-dimension mode and those related to increasing of devices' generation frequency, which is directly associated with increasing of resolution during research of organism tissues' ultrafine structures (3).

In identification of NLS-systems' operating characteristics, high-frequency generators have the principal meaning. The major part of the most significant achievements in picture quality improvement and in growing of our clinical possibilities is related to innovations in development of non-linear generators. Working frequency ranges of modern generators are within 1.4–4.9 GHz, which allows us to examine almost all internal organs, anatomical masses and tissues with up to 30 micron resolution. However, non-invasive visualization of ultrafine structure of tissue at separate cell organelles and DNA fragments may be hampered. That is why technology of high-frequency non-linear generators manufacturing have vastly changed (1,4).

Presently, together with American company "Clinic Tech. Inc", super high-frequency non-linear generators with 40-100 GHz operating frequency are developed and clinically tested. It enabled the 100 angstrom resolution. These technologies, which are not yet widely applied, are already called "NLS-ultramicroscanning". Most probably, in the near future, owing to the development of this area, we will be able to look into epithelial and endothelial tissues at the sub-cell level more closely and to research and correct the clusters of reborn cells.

The Institute of Practical Psychophysics, together with International Academy of Non-linear diagnostic systems, created analogue-free research equipment allowing to monitor the condition of biological object by changes in physical fields generated by organism's tissues.

The main problem of physical fields' influence to a cell ultra-structure and DNA helix is to find an extremely precise instrument which,

similar to laser, could influence the DNA molecule structure with the diameter less than 2 nanometers. Creation of such unique instrument became possible only after super-high-frequency non-linear generators were developed. These generators have the frequency of few dozens of gigahertz and additional feature of wide-pulse signal modulation to generate field oscillations with parameters peculiar to living cell in order to restore its regulatory mechanisms (4).

Another promising area of NLS-technology development is the creation of non-linear telemedicine monitoring system.

A remarkable opportunity of this method lies in enhancing the sensitivity of the diagnostics and expanding the system functionality due to technologically remote diagnostics (teliagnostics) in asynchronous mode of a dialogue between the doctor and the patient at which they can interactively communicate with one another, regardless of the location remoteness.

The system, offered by the Institute of Practical Psychophysics, provides opportunity to ensure an audiovisual contact between a patient and a doctor during non-linear diagnostics when a doctor is at a great distance from a patient.

The equipment can be applied in clinics, diagnostic centers and scientific research institutes to carry out distant diagnostics of patients using mobile terminals (in field conditions, in the mountains, at sea).

The body of the obtained data is sent through a specialized server to a medical advisory center with the observance of data safety requirements.

Another technical achievement, which opens up new prospects and features in NLS-diagnostics, is a "three-dimensional picture" (3D) (5).

Even a few years ago, 3D was considered as hardly applicable long-term aestheticism of professionals in NLS-diagnostics. Presently, it is an integral part of not only scientific studies, but practical diagnostics as well. There is a growing number of such terms as "surgery under control of three-dimensional NLS-visualization" or "3D virtual NLS-graphy".

Preparation of NLS pictures for visual analysis is carried out by means of "4D TISSUE" original system developed by the Institute, that allows not only getting of virtual multidimensional pictures of anatomic and histological structures, but also marking with color interesting biologic tissue – "additional dimension" and visualizing bones, soft tissues and vessels simultaneously or in any desired succession.

The peculiarity of virtual data representation in "4D TISSUE" system is a simultaneous visualization of cavernous and extramural growth surfaces that are located out of investigated cavity (lymph nodes, vessels). The taken pictures form natural consecution of virtual NLS-pictures. At the same time, special navigation programs automatically define trajectory of "virtual scanner" movement in the center of investigated cavity. Trajectory can be defined by other settings

stated by user which allows specification of NLS picture details by means of vision changing. Formed consecutions of NLS-pictures can be easily transformed into standard VHS format with the help of epi-client program and thus can be used with common video systems, for example for teleradiology (4,5).

First of all, "4D TISSUE" system is intended to reveal obstructive processes of the upper respiratory tracts, volumetric growths of gullet, stomach and large intestine, atherosclerotic lesions of large vessels, diseases of accessory sinuses of nose, urinary bladder and vertebral canal. Data acquired with "virtual NLS-graphy" allows choosing optimal place for biopsy in advance and determine the extent of surgical operation. This method can be used independently and as a connecting link between tomography, endoscopy and NLS researches.

Great future of such programs is unquestionable, because these technical achievements facilitate diagnostician's job and allows to represent clearly anatomic characteristics and pathological changes in the examination of an organism.

It seems that creation of ultra high-speed "intellectual" NLS-scanner is one of the most important features of new 3D generation (6).

Being different from computer tomography and NMR, NLS analysis does not require fields of high intensity. This method seems promising for metabolism researches, in particular at the cell level.

NLS method improved not only by means of introducing new technical inventions, but by new applications. Simple surgical manipulations,

such as biopsy, for a long time were carried out with the help of ultrasound, fluoroscopy and computer tomography. Now biopsy can also be controlled by NLS. However, surgeons are interested in more sophisticated operations that can be carried out using this method (6,7).

The cost of NLS diagnostic systems is much lower than the cost of other methods of hardware diagnostic. This must promote wide expansion of the method. Compared with other methods of hardware diagnostic, NLS allows getting the picture closest to pathologoanatomic one. This, together with safety, promotes quick development of NLS diagnostic method (1,2,7).

Conclusion

More and more clinical therapists realize the necessity to master NLS-diagnostic equipment, because the needs for properly educated experts in this field are obvious. However, among traditional medical specialists, there is a tendency to pay more attention to researches with computed X-ray imaging and magnetic resonance imaging. That is why the NLS-technologies, unfortunately, are still hidden among more orthodox methods of diagnostics. Clinicians will be ready (in many aspects are already ready) to improve their diagnostic possibilities by using the NLS-technology, often without X-CT, MRI and radio-nuclide methods.

Nevertheless, only in strategic partnership of NLS-diagnostics experts, radiologists and clinicians may be found a key to optimal diagnostic and healing application of this, in all senses, original and efficient medical technology.

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Osnovne tendencije razvoja nelinearne tehnologije

Vladimir Nesterov

Prva dekada novog veka bila je obeležena značajnim napretkom u razvoju dijagnostičkih karakteristika NLS tehnologije, prvenstveno uvođenjem kompjutera visokih performansi. Pragmatično tržište 3D dijagnostičkih tehnologija postepeno će se formirati pomoću neškodljivih nejonizujućih metoda i obezbediće sprovođenje mnogobrojnih dinamičkih istraživanja, odnosno NLS tehnologije će nesumnjivo doći u prvi plan. Sve više kliničara uviđa potrebu za upoznavanjem NLS dijagnostičke opreme iz razloga što su potrebe za obučanim osobljem iz ove oblasti očigledne. Međutim, tradicionalni pristup među lekarima je da se više oslanjaju na klasično rendgensko snimanje i magnetnu rezonancu. Upravo je to razlog zbog čega, nažalost, NLS tehnologije još uvek kasne za klasičnim dijagnostičkim metodama. Kliničari će biti osposobljeni (u mnogim aspektima već jesu) da poboljšaju svoje dijagnostičke procene primenom NLS tehnologije, često bez upotrebe X-CT, MRI i radionukleidnih metoda. Ipak, samo strateško partnerstvo eksperata za NLS tehnologije, radiologa i kliničara, može da dovede do optimalne primene ove, u svakom smislu, originalne i efikasne medicinske tehnologije.

Ovaj članak predstavlja osnovne principe medicinske dijagnostike primenom NLS metode. Sadrži opštu procenu dijagnostičkih mogućnosti u otkrivanju patologije različitih organa i pruža analizu mogućnosti razvoja ove metode. *Acta Medica Medianae* 2013;52(2):41-44.

Ključne reči: medicina, medicinska oprema, zdravstvena administracija, kvantna medicina, vibracija i komplementarna medicina, biorezonantna medicina