

The Other Side of the Clinical Examination in Modern Medicine

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The semiotic technique is the most widely recognized and practiced part of the clinical examination. However, there is another side that is just as or even more important than the ability to recognize and analyze signs and symptoms that gives the clinical examination a unique status in medical practice. This side, just like the flip side of a coin, contains the essential elements for first rate medicine and includes **human qualities, bioethical principles and the doctor-patient relationship**. It is this side that I am going to discuss in this “point of view”.

Initially, it is worthwhile to remember that the origins of medicine are associated with magical and mystical rituals that the primitive people practiced to care for the sick. The empirical observation of the sick person is the deepest root of the clinical method. Without a doubt the most significant time in the evolution of the clinical method was introduced by the Kos School of Medicine, where Hippocrates and his disciples began to consider sickness as a natural phenomenon and systemized patient examinations while defining the ethical basis of the profession.

One should never forget that while sicknesses may be similar, patients are unique. Nevertheless, only those who examine patients understand the truth in this statement and it is one of the basic principles of high quality medicine.

There is an ever increasing trend of declarations from both patients and doctors that the human side of medicine cannot be suffocated by technological advances. At the same time, everyone wants the latest and most refined technical resources to be readily available to the medical practice. How is it possible to conciliate one with the other? This is the greatest challenge of modern medicine. To confront it, one must remember that western medicine is a combination of traditions, knowledge and techniques that have been progressing for more than 2,500 years and are directly related to the ability to see the human being as a whole person, considering not only the biological aspects but also cultural and environmental relationships. Our mental process, supported by logical and intuitive elements, is able to store and discriminate this wisdom to apply it to the cure, or more appropriately, patient care. No machine is able to do this.

The possibility to evaluate the most diverse aspects of the human body or anatomical and functional alterations with such degree of detail and precision had never before been imagined. This fascinated the doctors to such a point that many thought – and some still do – that the clinical method had been replaced by medical technology. One result of this progress is the necessity to review knowledge and procedures, many of which should be abandoned. This signifies practicing medicine during a transition period which, as one would expect, resulted in two extreme positions: in one, there is a

concentration of professionals who for the sake of convenience or conviction blindly adhere to traditional medical practices and the other, congregates, sometimes blatantly, those who are spellbound by the novelties.

One must have an open mind and critical sense to find a balance between adopting the new for its usefulness without fear of preserving the positive aspects of the old. Without a doubt the clinical examination is medicine's best resource and we should use it to our full advantage, complementing it with the best that the technical resources have to offer. If we proceed in this manner, we will become more efficient without losing our sensitivity.

Additionally, one must not lose sight of the fact that there is a side of medicine that does not fall within the limits – and the limitations – of the devices and machines, no matter how wonderful they may be, as it is on this side that many of the essential components for our work will be discovered, or in other words, the doctor-patient relationship. It is this relationship that allows us to recognize the uncountable ways to feel, suffer and interpret what the patient feels and relate what happens within each one of us – the influences of cultural attributes, the participation of unconscious phenomena and environmental factors. Efficient patient care depends on all of these factors. The doctor's performance is not limited to identifying a disease and proving that it exists with complementary tests.

However, it cannot be denied that the great technical advances provoked relevant questions. Some pertinent and others not. The most important being: would it be possible for a computer memory loaded with all the information from medical treatments and related sciences contained in the journals and virtual world, be able to substitute, even with an advantage, the work that the doctors perform based on clinical examinations? In other words: can the clinical examination be replaced?

Put in these terms, the question establishes an opposition between clinical methods and technological advances. We should immediately acknowledge that there is no conflict between one and the other. They are different things. One can complement the other, but neither one can substitute the other. Each one has its place, but the clinical examination plays a special role in three crucial points of medical practice: **to determine diagnostic hypotheses, to establish a good doctor-patient relationship and to make decisions**.

The doctor who is able to determine consistent diagnostic hypotheses will also determine the best complementary tests to be performed. He knows what will produce the best “yield” for each case, optimizing the cost-benefit ratio in all its different senses. In addition, the interpretation of the laboratory, image and graphic results produced by the devices will be appropriate for each patient. Doctors who make a good clinical examinations, hone their critical sense and do not forget that the test findings are just “test results”

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and never represent a global assessment of the patient. In reality, the precise correlation between the clinical data and complementary test results can be considered a modern version of the “clinical eye”, the secret to success for the good doctors of today and yesteryear whose essence is the ability to appreciate details without losing sight of the entire picture, or in other words, lose sight of the patient’s human nature in all its complexity.

On the other hand, the doctor-patient relationship begins and develops during the clinical examination. It is worth saying that the quality of the examination depends on the time and attention that is dedicated to the medical history, a task that no machine can perform with the efficiency of a good interview. In fact, patients have noted and stated that when a machine is placed between them and the doctor, the doctor can become so awestruck by the machine that the patient is forgotten. The temptation to transfer the care and sympathy that used to be dedicated to the patient to a machine is directly related to the fascination that many doctors have for the modern equipment, mainly those beginning their careers, who do not yet have enough practical experience to develop the critical capacity of a professional, the only way to recognize the possibilities and limitations of the complementary tests.

It must be clear that the diagnostic decision is not the result of one or a few complementary tests, no matter how sophisticated they may be. It is also not the simple sum of the graphs, images and quantification of substances in the body. It is a process much more complex that encompasses all of these elements but is not restricted to them. In a diagnostic decision, the therapeutic plan which is the practical consequence of the decision and of greatest interest to the patient, other factors that are not always apparent or quantifiable must also be considered. The clinical examination is the only device that is sufficiently flexible and extensive to find the keys that “personalize” each diagnosis and therapeutic proposal. We must never forget that no two people are born, live their life, get sick or die in the same manner everywhere. We must remind ourselves, once again, that diseases may be similar but patients are unique.

What appeared to be conflicting – the clinical method and the complementary tests – begins to require an understanding that is more and more harmonious. While the clinical method is characterized by its unequal ability to see the patient as a whole, offering the sensitivity that no other method is able to, the specificity of the complementary tests is rising steadily. The conclusion is obvious: knowing how to associate them is the major challenge of modern medicine. It could also be the secret to the doctor’s success.

The other side of the clinical examination is the only method that can incorporate the bioethical principles – autonomy, beneficence, non-maleficence, secrecy and justice – to all medical procedures. To consider ethics beyond an abstract theory, confined to deontological codes, they must be translated into the values and attitudes that are present every time a doctor sees a patient. Relevant questions, that have not yet been clearly defined from the ethical point of view, appear more and more in the practice of modern medicine. A pertinent example is the ability to maintain or prolong life using artificial means for patients whose scientific possibilities of recuperation have run out. In the field of cardiology, doctors deal with this question on a daily basis. Once again, it is the data obtained during the clinical examination that will allow them to make the most appropriate decisions.

All the knowledge, standards and technical resources must be analyzed for each patient and applied in a personalized manner. This is humanistic medicine: see the sick person and not the damaged organ.

To say that medicine is a science and an art is not an unwarranted declaration or a melancholic thought. Likewise, it is not an elegant method to react to the technical advances that we are seeing.

The advances in information technology during the past few years have enabled us to learn some lessons from the attempts to develop logical systems in order to substitute clinical reasoning. The idea was based on the hypothesis that a computer memory loaded with the greatest amount of information possible would be able to make perfect diagnoses with greater speed. The results were disappointing and the initial enthusiasm was short lived. The only successful operations were the interpretation of graphs and images such as electrocardiograms, scintigraphy studies, and radiological images that are composed of elements that can be easily transferred into some type of computer language. Such attempts however were unsuccessful with clinical data, that are extremely variable and unpredictable but, on the other hand, totally adequate for the complex mental processes that lead us to make diagnoses and therapeutic decisions. Without realizing it, because in reality most of these processes occur at the unconscious level, we use numerous elements apparently unrelated to the facts obtained in the patient examination to reach conclusions which include physiological, anthropological, social, cultural and other relevant data. Diagnostic reasoning can be compared to complex decision trees with a large and variable number of components that are continually appearing and changing, beginning with our first glance at the patient until at some specific point in time are transformed into a diagnostic decision.

Based on this, it is correct to say that in the clinical examination lies the link between medical science and the art of medicine. Or in other words, it is during the examination of the patient that science and art merge together, and this happens in many ways. The first component consists of the scientific knowledge that should be organized and applied in an objective manner within the strict rules required for science, absolutely rational and to a certain extent easy to classify. In this aspect, statistical techniques and electronic data calculation is advantageous to us since it is an unquestionable prevalence of the objective over the subjective, similar to what happens in all branches of the natural sciences.

However medical practice is never restricted to these limits since in addition to them we have the doctor-patient relationship to influence treatment adherence, the effects of medications and surgeries which arise from the various sensations and reactions to medications and other procedures. At this point it is the subjective reacting with or even replacing the objective; it is intuition that is just as or more important than the rational and logical processes. The precise limits imposed by medical science are replaced by the undefined limits and unstable references, inevitably unpredictable, that are going to comprise the second component of the medical profession that has been conventionally called the art of medicine.

It is only during the clinical examination that these two sides go hand in hand, intercommunicating, mutually influencing, integrating the logical and rational side with the intuitive and the subjective side. Morin, in his analysis of the advances in

human knowledge, that are becoming increasingly fragmented with negative reflexes in their daily applications, emphasized the need to identify the interfaces of new discoveries seeking to establish bridges between them, that produced the so called “knowledge relinking”, an essential process to transform scientific achievements into practical actions.

The trait that distinguishes medicine from other professions is this irrational, illogical side that forces us to look beyond the diseased cell and altered organ. The clinical method allows us to penetrate this complex world as it conciliates the rational side that is fed from the scientific knowledge with the unknown aspects of human nature that are even more complex when factors such as pain, suffering, risk of life and fear of death are involved. Nevertheless, little or no knowledge does not mean that it does not exist or justify ignoring this other side of the medical practice. In fact, it is important to appreciate it, as it could contain the mysteries that determine whether or not the patient will be healthy or become ill. It could make the difference between a good doctor and a mediocre professional.

The clinical examination, by making this fusion, breaks the limits of Cartesian and positivist science that limits medicine to the scope of diseases and enables the acceptance of the imponderable which is always present when treating the sick.

Medical history and physical examination

Thinking along these lines, the greater the progress of technical resources the more important the patient interview becomes, not only to analyze signs and symptoms but mainly to become acquainted with and take care of the patient.

The medical history is a fundamental part of the doctor-patient relationship and is the most important component in treatment adhesion, mainly when dealing with life style changes and the continual use of medication. A good doctor-patient relationship influences not only treatment adhesion but also therapeutic intervention results whether they be pharmacological, dietary or surgical.

One must not forget that human qualities such as respect, integrity and compassion, essential for patient care, also comprise a portion of the intimate mechanisms of the clinical examination, or in other words, this other side of the clinical examination.

Respect, expressed by our words, gestures and attitudes is the basis of appreciating the patient as a human being. Integrity, another essential quality, is the need to not deceive or delude the patient with false statements, make clear or veiled threats of inexistent risks, or promises in vain. Compassion, a difficult quality to define, resides in our ability to understand the patient's suffering and the willingness to do everything possible to eliminate or alleviate it.

The role of the physical examination in cardiology has been modified throughout the years and became much more important after the introduction of complementary tests in daily practice, which completely changed our ability to evaluate the structure and functions of the cardiovascular system. Nevertheless, what I want to emphasize here is the “other side” of the physical examination.

Inspection is still an essential technique, not only for the information it can supply on the heart's condition but also for the overall vision of the patient that no other method can supply. However, you must be aware that inspection is not

the same as looking. Inspection is just one semiotic technique while looking is a component of the relationship between two people.

Palpation of the radial pulse has two independent connotations. The first is its ability to demonstrate alterations in the rhythm, heart rate, artery wall and pulse wave trends. The other is the symbolic act of physical contact with the patient. Generally speaking, our first physical contact with the patient is palpation of the radial pulse. At this time, the doctors should take advantage of the opportunity to evaluate the patient's hands. Shaky, cold or sweaty hands express anxiety and the awareness of this is important when the time comes to make decisions and announce them to the patient. Additionally, the act of “touching” the patient could represent the beginning of the doctor-patient relationship and a gesture of support in a moment of frailty and fear.

It is of utmost importance to understand and appreciate the psychological meaning of the physical examination. The emotional component is also present in the physical examination, even though it is clearer and more evident in the medical history and is visible in the patient's manner of speaking as well as in our gestures and attitudes. The doctor should be very aware of this, as it could become one of the most important factors of the doctor-patient relationship.

The techniques that we use to identify anatomical or functional alterations – inspection, palpation, percussion and auscultation – contain another component for the patient that is often forgotten or ignored by the doctor. It is the “other side” of the physical examination. Thus, inspection includes looking; palpation and percussion include touching; auscultation includes hearing.

It is necessary to understand that inspection and looking are inseparable while **palpation and touching** are complementary procedures. The synthesis of this double significance of the physical examination is easily understood if the doctor is attentive enough to comprehend the real meaning when patients say: **“Doctor, I am in your hands!”** This expression has a double meaning; first it signifies that the patient hopes that our hands will produce a prescription, procedure or surgical solution to free them from the suffering and secondly that they are putting their well being in our hands to decide or help in the process of choosing the best course of action. This is the moment that decides whether or not the bond will be made – the therapeutic bond – which will determine the success or failure of our actions.

When the doctor looks at the patient, it is not to merely inspect the body (technical part) to determine paleness, cyanosis, jaundice or other alterations, but is also to see the person as a whole, never forgetting that the patient's heart is in the chest of the person that confided in us and not on our table for examination. Or in other words, by looking at the patient we are able to recognize anatomical and functional alterations while simultaneously detecting emotional aspects such as – for example - a tense facial expression or anxiety. When performing palpation or percussion, to identify structural modifications we must also be aware that we are touching the patient's body with our hands. Touching from a psychological point of view is more than palpation. With auscultation the doctor can detect bruits originating in the body but it is often more important to know how to listen to what the patient is telling us with their words or gestures.

From this it can be determined that the doctor who recognizes and appreciates the other side of the clinical

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examination knows how to inspect and look, palpate and touch, auscultate and hear. The two components – semiotic techniques and psychological significance – mutually reinforce one another, making the clinical method an inexhaustible fountain of information on the patient and the disease.

Throughout my life as a doctor, I have learned to use the final part of the heart auscultation for a moment of reflection on the patient close to me. In one or two minutes, taking advantage of that instant of silence and concentration, I weigh everything that I have heard and observed, not only from the semiological point of view, it is much more than this, but also in an attempt to insert all the clinical data in the context of the life of the person that is there waiting for what I have to say which will often be decisive not only for his life but also the lives of his family.

Conclusion

The art of medicine resides in providing medical science to each patient and the clinical examination is the best method to achieve this objective. The greatest challenge is how to do this. It should be clear that technical ability, represented by updated information, perfect control of techniques and procedures and the skill to handle equipment and machines, is mandatory to practice modern medicine. But it is worth asking: would technical ability alone be sufficient to take good care of patients? It is necessary, however it is not enough. We are not human body engineers or mechanics that repair machines, we must add something more to the technical ability. Something much more important. It is worth reminding those who adopted the mechanic's approach to humans that according to the rules of robotics it will be possible in the future for robots to create and fix other robots. On the other hand, everything leads us to believe that the patients will always be people and will continue to be taken care of by doctors who will also remain, above all else, humans.

Incidentally, it is worth emphasizing that we are currently in a transition phase that is intended to change "clinical thinking" which has been the basis of medical practice since Hippocrates. This was reinforced by the creation of medical science based on the work of Vesalius and consolidated over a few centuries by the clinical anatomy model. This in turn led to the creation of physiopathological reasoning as emphasized by Foucault in his classic work "The Birth of the Clinic". The current trend is to substitute clinical thinking with "probabilistic models", the main basis of Evidence Based Medicine (statistics). This transition is marked by the frequent ambivalent and incomplete use of protocols and guidelines, which demonstrates the difficulties that doctors still have to rationalize probabilistically. This is due to the fact that no

doctors ignore their past experience, which is the basis of clinical thinking and the result of their experience working with patients. I believe that as time goes on we will reach a balance, as has been accomplished at other times in the history of medicine, but to attain this, links will have to be created between "clinical thinking" and the "probabilistic models".

Since the art of medicine includes technical ability, human qualities, bioethical principles and legal standards, and depends on relationship skills, we established the following equation: $AM = E [EBM + (KBM)^2]$, in which "E" represents Ethics, "EBM" represents Evidence Based Medicine and "KBM" represents Experience Based Medicine.

The main component of the equation is Ethics (E), as this depicts the true essence of medical practice since medicine is a profession to serve the well being of humans. Evidence Based Medicine (EBM) that is based on statistical techniques which do not consider the human nature of the patient is included in the equation because it supplies valid and useful information to analyze diseases, complementary tests and some treatments; however, it is not the most important component of the equation. This factor does not determine the result of the equation.

No one denies that the medical profession should be practiced with the support of solid scientific information, but human qualities, innate or taught; the doctor-patient relationship, considered the focal point of medicine; and clearly defined bioethical principles should also be considered in conjunction with the scientific information. Consequently, the stressed component of the equation is Experience Based Medicine (KBM), an expression taken from the phenomenological conception of life that as emphasized by Merleau-Ponty, is not only the result of biological processes but includes psychosocial and cultural aspects which are the only way to understand the patient as a human. Experiences in this context include professional training, insight, common sense, solidarity, sensitivity and above all else the ability to communicate and relate to another human being. Since this component is the quality marker for the art of medicine, it is worth mentioning that those of us in the medical profession considered that it should be squared in order to give it a differentiated weight in the equation.

With this metaphoric equation we are trying to demonstrate that only those doctors who are technically competent and work within the elevated ethical and scientific standards can practice the art of medicine in patient care. In other words, the art of medicine is a medical practice that places the human nature of both the doctor and the patient above any other aspect. In order to achieve this objective, it is fundamental to acknowledge and practice the other side of the clinical examination.

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