

THE SIGNIFICANCE OF THE IMAGING EXAMINATION IN THE RECOVERY PROCESS OF SCOLIOSIS

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Keywords: functional physical deficiency, scoliosis, examination.

Abstract: The current article presents several general aspects based on a research in progress and desires argument the necessity for the paraclinical investigation, respectively imagistic examination of the type of radiography for the establishment of the positive diagnosis in the treatment of functional physical deficiencies, of scoliosis in particular.

Introduction: Scoliosis belongs to the category of functional physical deficiencies of the spine and currently, according to statistics, these deficiencies have a high degree of occurrence at children of pre-pubertarian age.

The casuistic submitted to research confirms the fact that scoliosis, once installed, are in most cases developmental and hard to manage, due to the fact that they are discovered late and the methods of treatment are not always appropriately chosen. Regular examination of the body posture may be a significant factor in what concerns the prevention of functional physical deficiencies, especially of those related to the spine.

Except for those deficiencies etiologically congenital or of an infectious nature (such as poliomyelitis, skeletal tuberculosis, other genetic or rheumatic deficiencies) during the period of growth and development, there are moments which could favor the installment of postural deficiencies on the ground of an accelerated growth.

Obesity, certain forms of musculo-ligamentous insufficiency, excessive sedentariness, prolonged activity in uncomfortable, vicious positions during growth may constitute the appropriate ground for the installment and aggravation of the functional physical deficiency at the spine level (Ştefan A. Birtolon, 1978, p. 27).

Regardless of the fact that there have been conducted numerous researches regarding the etiology of the scoliosis, one of the most frequent deficiencies of the spine, its cause remains almost unknown (Mihai Jianu, 2010, p. 34).

The role played by the paravertebral muscles is most frequently brought into discussion in the argumentation of the installation of scoliosis, given that biomechanically, its role in stability is obvious and demonstrated. The factors most incriminated by the majority of researchers comprise a quite large area, referring at the same time to intrinsic and to extrinsic factors. Irrespective of the manner the postural deficit is installed, its screening must occur as soon as possible, in order not to permit its aggravation, implicitly that of the structure. The methods of examination and identification of spinal deficiencies are known and accepted by the majority of specialists, annual periodical investigations are conducted in medical cabinets in schools, or in the practices of GPs, all forms of control are being conducted over children, and yet the number of patients diagnosed with scoliosis is alarmingly increased.

Material and method:

In order to argument and support the hypothesis emitted, that is the importance of the imagistic examination in the confirmation of positive diagnosis in scoliosis, a case study will be presented. At the clinic Coramed in Suceava, are conducted somatoscopic, anthropometric and functional investigations for the majority of children who are guided to this recovery center. If some of the cases are clear while being accompanied by a positive diagnosis with all the investigations up to date, in certain situations, both the diagnosis and the referral slip are not sufficient for the confirmation of the pathology. The somatoscopic and the anthropometric investigations may be subjective and may comprise a cumulous of variables, both in what regards the method and the professional point of view of the person conducting the investigation.

A scoliosis case which at first sight did not raise any level of gravity, subsequently, after the radiographic test, it was considered that it needed orthotic corsetage. We mention that the scolioses comprised between 0°-30° are approached by means of a kinetic program, those comprised between 30°-50°, corset and physiotherapy, while those over 50° may be reduced by means of surgical techniques.

The patient presented in this case is guided towards our clinic by her GP, who, during a periodical examination, acknowledges an asymmetry at the level of the shoulder blades, accompanied by a minor postural deficit. Are conducted the standard investigations comprised in the specific protocol of spinal deficiencies, are performed as well measurements and the information is registered on electronic medium in order for it to be processed, monitored and compared. Due to the fact that

the patient does not correspond from the normal weight point of view, it is recommended a specific program of physical exercise, postural hygiene, appropriate nutrition, and after that, we proceed to instruction regarding the program to be conducted.



Fig. 1 The patient investigated in standing position Fig.2 Radiography

Simultaneously it is consulted the specialist doctor in orthopedics who proceeds to conducting supplementary investigations, in particular those of imagistic type (radiography).

If the investigation stops only after the acknowledgement of the symmetry of the shoulders line or the position of the shoulder blades, the postural malalignment is difficult to observe, yet if we will look at the spaces between the arms and the trunk, the difference may be easily observed. In the right side, it can be noticed a larger space between the arm and the trunk, which emphasizes a thoraco-lumbar left scoliosis. While analyzing the radiography, it can be notices that an “S” scoliosis is present. In consequence, at the primary examination of somatoscopic kind could not be observed anything else but the thoraco-lumbar left scoliosis, while the radiography allowed the acknowledgement of its compensation in the right side of the cervico-thoracic area. In the majority of cases, the scolioses which appear during this period, (pre-pubertarian), ere developmental and are difficult to screen. In most cases, are treated superficially and in the moment when it is tried their treatment, this thing is no longer possible, the only remaining solution to be done in this stage being the attempt to stabilize the situation.

Also within this context, we will present a case in which a scoliosis screened in time and managed correspondingly, was corrected by means of physiotherapy in less than 6 months.

The female patient aged 11, comes at the clinic with a “C” thoracolumbar left scoliosis presenting an angulation of 10°-12°. The fact that she followed the physiotherapeutic program on a regular basis, at the investigation conducted after six months, it can be noticed the reduction of the scoliosis to almost normal, with a little angulation. Also, the fact that the scoliosis was observed in an incipient stage and that it was correspondingly managed while the patient followed a strict program of specific physical exercises, materialized into stopping and reducing the scoliosis. In the third figure is presented the initial examination, while in the fourth figure, it is presented the radiography realized after six months.



Fig.3 Radiography 2013



Fig.4 Radiography 2014

It is assumed that the scolioses installed during the pre-pubertarian period and even earlier are developmental, which aspect renders harder their treatment by means of strictly physiotherapeutic methods. The imagistic examination is to be mandatorily conducted as a means of investigation and establishment of the positive diagnosis, as well as for the establishment with certainty of the degree of angulation of the scoliosis, in order to monitor the evolution of the recovery process.

Results and discussion:

By presenting the two study cases of scoliosis may confirm the significance of periodical examinations in children starting with school age. The persons who may notice in time these deficiencies are the parents. Due to the fact that they claim the lack of knowledge in this area makes that these malalignments are not observed in time by the special doctor, and unfortunately their evolution is most of times rapid. We stipulate that in the moment of notice of these postural deficiencies it cannot be stated with certainty whether they are development or not, given the fact that these appear on a dynamic field of growth and development, which does not allow the stabilization and correction in complete. Especially due to this state of permanent change from the organism's morphological point of view at this age there must be monitored and registered the evolution of the process of growth and development.

Conclusions:

- Scolioses are deficiencies producing modifications of morphological and structural order on the spine and chest with implications over the posture, without being screened by means of a simple somatoscopic examination.
- The later they are noticed, the more difficult or even impossible the process of recovery by means of classical methods.
- The developmental state of these deficiencies cannot be previewed.
- The necessity of imagistic investigation is mandatory in the perspective of monitoring and managing with objectivity the program of recovery for spinal physical functional deficiencies.

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Titlu: Importanța examenului imagistic în recuperarea scoliozei

Cuvinte cheie: deficiența fizică funcțională, scolioză, evaluare.

Abstract: Acest articol prezintă unele aspecte generale ce au la bază, un studiu aflat în derulare, și dorește să argumenteze necesitatea examenului paraclinic, respectiv imagistic de tipul radiografiei pentru stabilirea diagnosticului pozitiv în tratamentul deficiențelor fizice funcționale și anume, al scoliozelor.