

Case Report

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Conservative Treatment of Idiopathic Scoliosis through the Global Postural Re-Education

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Abstract

The Scoliosis Research Society defines scoliosis as a deformity in the frontal plane with a Cobb angle greater than 10°.

Our case report shows a seven year's old patient suffering from idiopathic scoliosis related to a myogenic torticollis from birth by hematoma of Sternocleidomastoid (SCM) dx.

The patient through the rehabilitation treatment with the Global Postural Re-education (GPR) with frequency of a weekly session of 60 minutes, for a period of 14 months, showed a significant improvement of the postural, the reduction in Cobb degrees of scoliosis and lordosis and quality of life. However, it appears necessary to continue studying conservative rehabilitation methods effective for idiopathic scoliosis.

Keywords: Scoliosis; Global postural re-education; Coob; Conservative treatment

Introduction

Idiopathic Scoliosis (IS) is a complex structural deformity of the spine that twists on the three planes of space [1-4]. According to definition idiopathic scoliosis is a multi-factorial disease.

From a etiopathogenic point of view therefore the spinal deformity caused by idiopathic scoliosis can be defined as the sign of a complex syndrome with a multifactorial ethology [5,6].

This syndrome shows itself almost always with a deformity, but deeper investigations may show sub-clinical significant signs [3,6-8].

Idiopathic Scoliosis (IS) can occur at any time during childhood and adolescence. It is more common in periods of strong growth between 6 and 24 months, between 5 and 8 years, and between 11 and 14 years of life. The rate of development of the spinal curve changes more rapidly at the beginning of puberty [9].

The Scoliosis Research Society [1,10] defines scoliosis as a deformity in the frontal plane with a Cobb angle greater than 10°.

Based on this data, many papers published on the effectiveness of conservative treatment of scoliosis (physiotherapy, plaster braces, braces) use as a parameter modification of Cobb. This is intended to be reviewed in the future considering the importance of the vertebral rotation, evaluated both radio graphically and clinically [11].

The idiopathic scoliosis may be classified differently [1,4,12] according to the initial localization of deformities: scoliosis thoracic, thoracolumbar, lumbar, double curve, and according to the age of onset: childhood, adolescence and youth.

Even idiopathic scoliosis patient belongs to who ICIDH classification [13] under the voices "disease" and "disability".

These definitions have been updated by WHO in the new classification ICF [13] as impairment, reduction of activity and restriction of participation, which can also be applied to the patient with idiopathic scoliosis.

There are many rehabilitation treatments already validated for the conservative treatment of idiopathic scoliosis [13-15].

Case Report

In September 2013, a seven year's old girl during a orthopaedic visit showed results of myogenic torticollis hematoma of the right SCM deviation broad spine cervical-back injury, with mild and initial rotation of the somites, asymmetry of the shoulder girdle left with the presence of scapular winging. At the time of the specialist assessment (September 2013) the radiographic situation was as follows: in the frontal plane curve D4-L2 20° Cobb, sagittal cervical lordosis of 52° Cobb, lumbar 36° Cobb.

The orthopaedic surgeon prescribed a course of Global Postural Re-education (GPR) according to the method of Ph. E. Souchard [16,17]. The personal history at birth (spontaneous delivery at 41 weeks) showed a weight of 4100 kg, a length of 52 cm, a head circumference of 36.5 cm. The first check at the age of 15-30 days showed an attitude of right tilt of the head and the ultrasound showed a myogenic torticollis; the patient performed rehabilitation treatment from 15 days of life up to four years. Since September 2013, the patient underwent a functional evaluation and a cycle of Global Postural Re-education for one weekly session lasting one-hour / day (Figures 1 and 2).

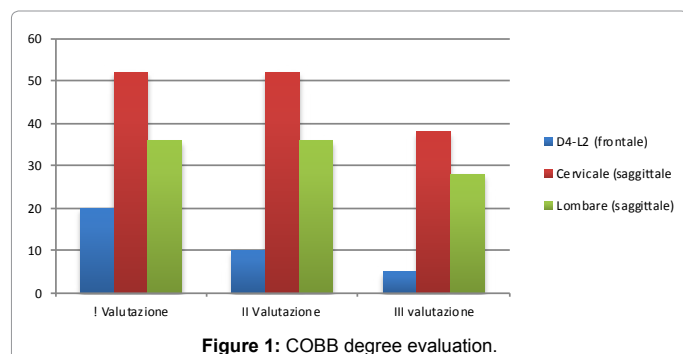
For the assessment of pain and activities of daily life were administered at each assessment, the VAS and SF-3. This allowed the evaluator to verify the improvements during the year of treatment.

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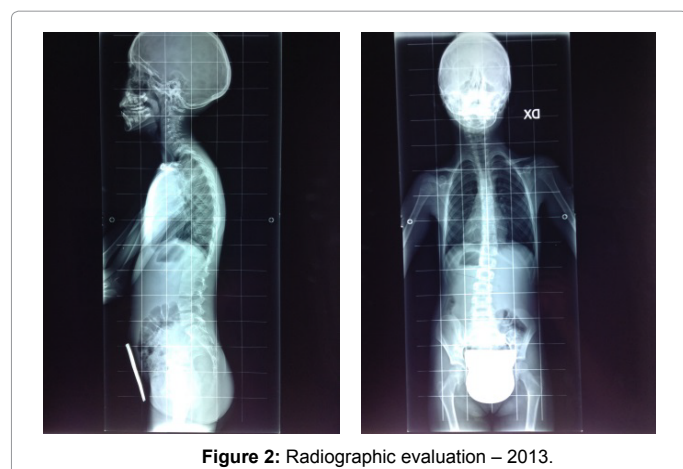
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traditionally defined as “free treatment” (exercises with medical follow) and concerns the so-called minor scoliosis (normally below 20° Cobb).

Idiopathic scoliosis prevention has to always be treated by physiotherapists because a minor scoliosis may lead into a major scoliosis [12,13].

The prevention mainly consists of specific exercises of physiotherapy: it is a work aimed at improving the capacity of neuro-motor, adapted and controlled on the basis of the pathology and the individual characteristics of the individual patient. The whole exercise is aimed at improving the specific skills of the individual (balance, coordination and eye-hand control) respecting the balance of biomechanics (the action is on three floors of the space).



The physiotherapeutic treatment consists of individual sessions with the presence of the physiotherapist, and sessions of self-correction through the self-posture, that the patient must perform at home.

At the first orthopaedic control held in January 2014 (follow-up 4 months) the patient was improved according radiography (scoliosis D4-L2 10 degrees Cobb); it appeared clinically improved the set postural general and in particular the ratio skull-neck. During the second orthopaedic control held in March 2014 (follow-up seven months) the clinical and radiographic situation was unchanged and then it was requested to continue with the same method of rehabilitation (GPR).

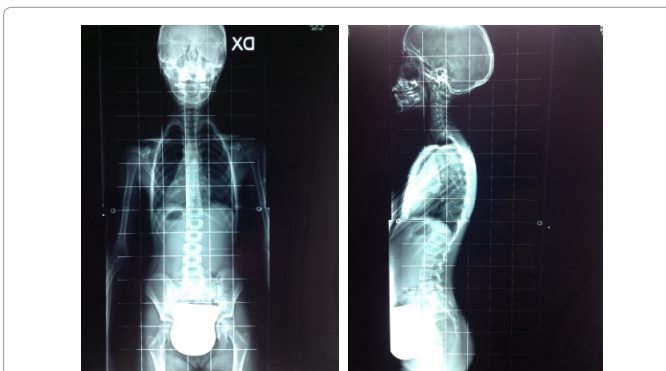
At last check orthopaedic November 2014 (follow-up 14 months) the patient showed good curve correction Front (scoliosis D4-L2 5 degrees Cobb) (Figure 1) and a residual asymmetry of the shoulder girdle. On sagittal plane it was reduced the hyper-lordosis lumbar but greatly reduced the cervical (cervical 38th, lumbar 28°) (Figures 3-5).

Score analysis of the SF-36 shown an improvement of the 6% regard physical activity, an improvement of the 12% physical pain and an improvement of the 25% general health. Indeed patient used to report to be completely limitless about physical activity.

The evaluation of health status showed a significant improvement in the perception of the general health and this allows us to state that the rehabilitation program has motivated and improved the health of the patient.

Discussion

The treatment of IS is a course of treatment and prevention of the aggravation [3-5]. An idiopathic scoliosis under 20° Cobb is considered exclusively a physiotherapeutic treatment [17]. This therapeutic phase is



Treatment with Global Postural Re-education showed great improvements of daily life, of the postural and balance sheet radiographic Cobb degrees of scoliosis in spite of the pre-pubertal and high upgradeability [10].

It was also evident in an improvement in the sagittal plane. The results of this case report can make a contribution to continue in the direction of this method and physiotherapy for further investigation around the physiotherapy in the IS and the GPR in IS with more houses and clinical studies. "The authors declare that there is no conflict of interests regarding the publication of this paper".

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