

Opinion Article

Syndrome of Contractures and Deformities (SofCD): Dysplasia of Hips, Varus Deformity of Shanks, Wry Neck, So-Called Idiopathic Scoliosis Causes Clinic Prophylaxis Therapy

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Abstract

In the article we present one of two main etiopathological groups of pathology of locomotor system. The health of the adults very often depends on the effectiveness of prophylaxis and proper treatment of disorders in the childhood.

The treatment of children often can be easy and give good results, what is important for all years of life of everybody. In our experience, the abnormalities described in article are very frequent, due to various reasons. In the article we present one of the causes of pathology.

Keywords: Etiopathological Groups; Pathology; Idiopathic Scoliosis; Dysplasia

Introduction

Information about the two groups of pathology:

The first group is connected with discoveries and publications of Prof. Hans Mau. He has observed some asymmetries of the “body build of the newborns and babies” and asymmetries in range of movement of joints and described it as “Seven Contractures Syndrome” (German Siebenersyndrom) (Fig. 1-12). In Lublin for this pathology we use - the term “Syndrome of Contractures and Deformities” [SofCD] because in 2006 we added to this syndrome-the eighth deformity - varus of shanks.

The second group of pathology symptoms of Minimal Brain Dysfunction (MBD) influence the health and wellbeing of children, adolescents, but if not properly treated, also these of the adults. Both abnormalities should be cured in the childhood. This problem will be presented in other articles in the Journal of Orthopaedic Science and Research. There are of course other “causes and forms of pathology” in children, like congenital, post inflammation disorders, post injuries disorders and others. In this article we focus on the SofCD and its influence on hips, shanks, knees, pelvis and spine.

Causes of SofCD. There are two causes leading to SofCD. First - factors connected with the pregnancy and “fetus body build”: higher weight, greater body length. Second maternal features: small abdomen during pregnancy, lack of amniotic fluids (oligohydramion) and inconvenient, “androidal” or “platypeloidal” pelvic bone anatomy.

In such situations development of fetus can be asymmetrical with wrong position of body, with asymmetry in ranges of movements in many joints, even with contractures, that is maximally limited movements of joints leading to incorrect position. All these asymmetries had described Prof. Hans Mau in years 1960-1970. It is especially important in the problem of hips, because the limited abduction mostly of the left hip, can lead to dysplasia and limited adduction of the right hip in their extension position

play the decisive role in etiology of the so-called idiopathic scoliosis. This etiology though many years was not known and described in Lublin [1-10]. Research in field of scoliosis was performed in years 1984 till 2023 but the etiology was described ultimately in years 1995 - 2007 [11-44]. Influences in development of scoliosis are strict "biomechanical" and are connected with function - a/ "walking" and b/ "permanent standing 'at ease' on the right leg". Additionally, and secondary role in development of scoliosis - play disorder of Central Nerve System in children with Minimal Brain Dysfunction see our other articles in Journal of Orthopaedic Science and Research.

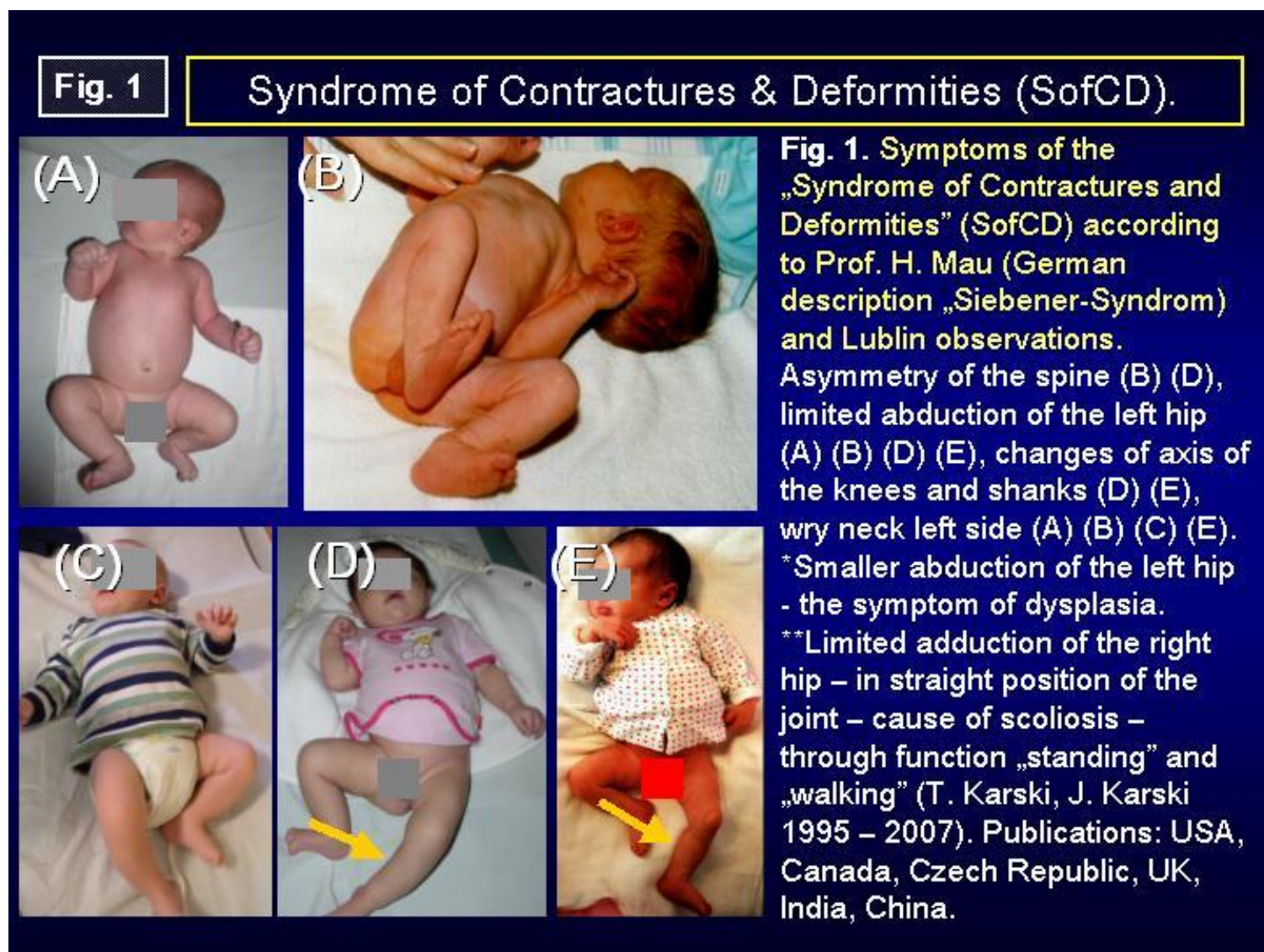


Figure 1: Symptoms of the „Syndrome of Contractures and Deformities (SofCD) according to Prof. H. Mau (German description Siebener-Syndrom) and Lublin observations. Asymmetry of the spine (B) (D), limited abduction of the left hip (A) (B) (D) (E), changes of axis of the knees and shanks (D) (E), wry neck left side (A) (B) (C) (E), Smaller abduction of the left hip - the symptom of dysplasia, Limited adduction of the right hip - in straight position of the joint - cause of scoliosis - through function „standing and „walking” (T. Karski, 1995 - 2007). Publications: USA, Canada, Czech Republic, UK, India, China.

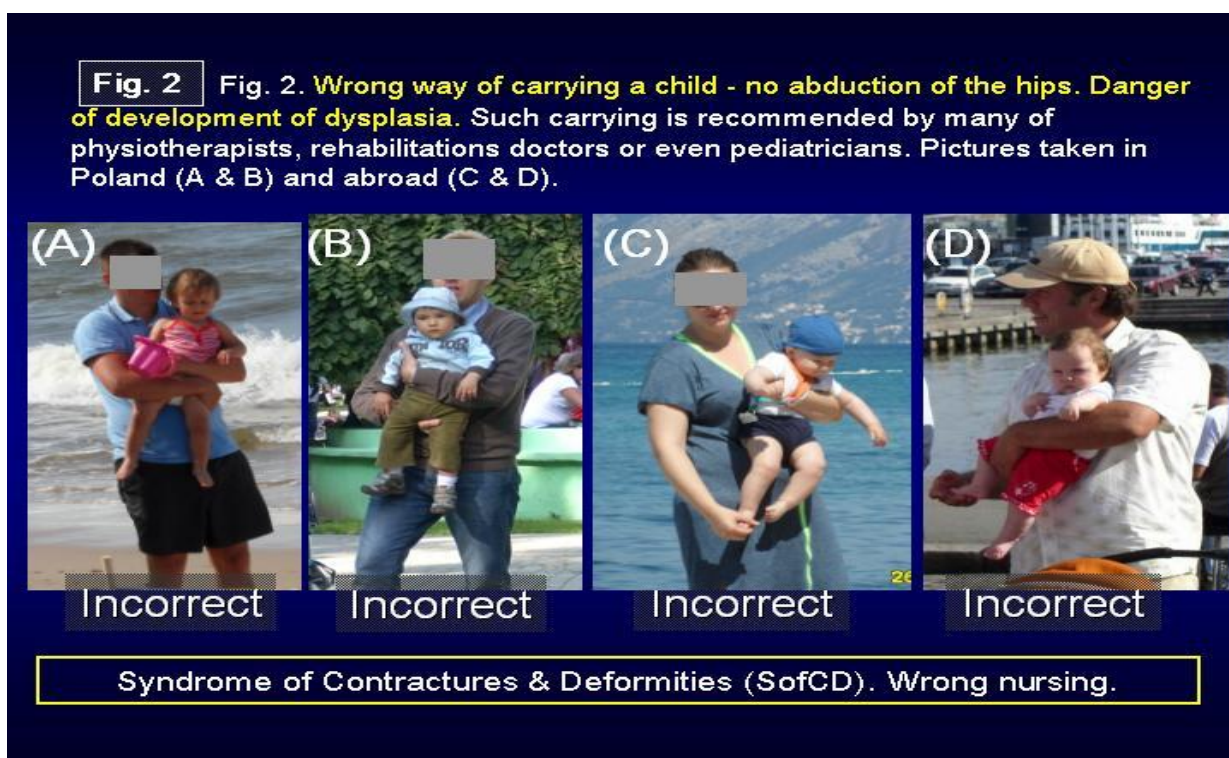


Figure 2: Syndrome of Contractures and Deformities (SofCD). Wrong way of carrying a child - no abduction of the hips. Danger of development of dysplasia. Such carrying is recommended by many of physiotherapists, rehabilitations doctors or even pediatricians. Pictures taken in Poland (A and B) and abroad (C and D).

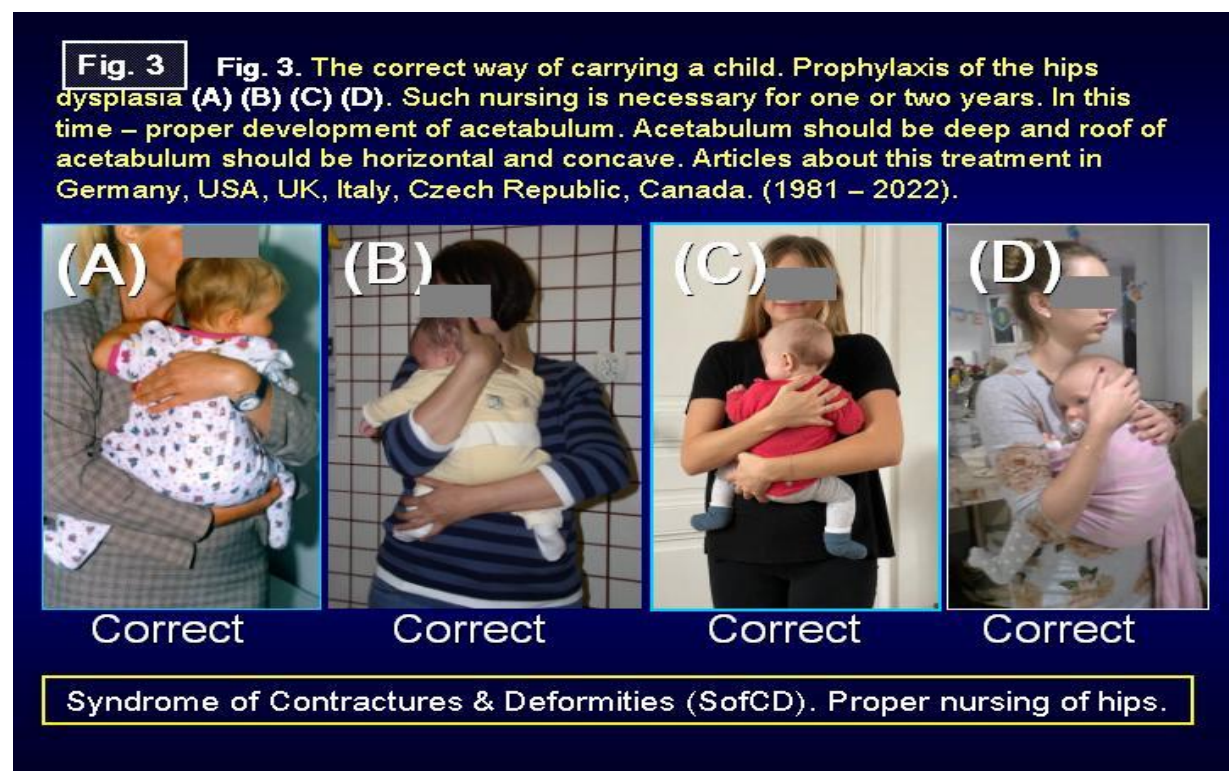


Figure 3: Syndrome of Contractures and Deformities (SofCD). The correct way of carrying a child. Prophylaxis of the hips dysplasia (A) (B) (C) (D). Such nursing is necessary for one or two years. In this time - proper development of acetabulum. Acetabulum should be deep and roof of acetabulum should be horizontal and concave. Articles about this treatment in Germany, USA, UK, Italy, Czech Republic, Canada. (1981 - 2022).

Fig. 4

Fig. 4. For proper development of hips – it is important not only proper carrying of the child – but also the proper position of sitting. In this position the development of hips is fully proper – correct Antetorsion (AT), acetabulum sufficient deep, proper axis of knees. This position is called in karate „butterfly position” In orthopedic language in Lublin we say „polish position of sitting”. On the picture Maria 1 years old on legs of grandmother. Articles about this treatment in Germany, USA, UK, Italy, Czech Republic, Canada. (T. Karski, J. Karski 1970 – 2022).

Syndrome of Contractures & Deformities (SofCD). Proper sitting of child.

Figure 4: For proper development of hips - it is important not only proper carrying of the child - but also the proper position of sitting. In this position the development of hips is fully proper - correct Antetorsion (AT), acetabulum sufficient deep, proper axis of knees. This position is called in karate „butterfly position”. In orthopedic language in Lublin we say „polish position of sitting”. On the picture Maria 1 years old on legs of grandmother. Articles about this treatment in Germany, USA, UK, Italy, Czech Republic, Canada. (T. Karski, J. Karski 1970 - 2022).

Fig. 5

Syndrome of Contractures & Deformities (SofCD). Therapy.



Fig. 5. Syndrome of Contracture and Deformities. Three year old child. Wry neck left side. Shortened M. sterno – cleido – mastoideus. On figure presented therapy. Stretching - rotation redression to the left side - to wry neck side (!) is only proper and successfully method of therapy even for older children. At this age a successful therapy needs more time, even 1 - 2 years, if the time of the stretching lasts 1 - 2 hours every day. Publications: Germany, USA.

Figure 5: Syndrome of Contracture and Deformities. Three-year-old child. Wry neck left side. Shortened M. sterno - cleido - mastoideus. On figure presented therapy. Stretching - rotation redression to the left side - to wry neck side (!) is only proper and successfully method of therapy even for older children. At this age a successful therapy needs more time, even 1 - 2 years, if the time of the stretching lasts 1 - 2 hours every day. Publications: Germany, USA.

Fig. 6

Fig. 6. „Syndrome of Contractures and Deformities” (SofCD). In 2006 in Lublin we add to the SofCD the varus deformity of shanks as eighth deformation. It is first step in Blount disease. This deformity from 1981 we treat by exclusion of the Heuter – Volkmann law – „no standing” and „no walking” two – three month. Articles: USA, Canada, Czech Republic, UK.



Syndrome of Contractures & Deformities (SofCD). Crura vara.

Figure 6: Syndrome of Contractures and Deformities (SofCD). In 2006 in Lublin we add to the SofCD the varus deformity of shanks as eighth deformation. It is first step in Blount disease. This deformity from 1981 we treat by exclusion of the Heuter - Volkmann law - “no standing” and “no walking” two - three month. Articles: USA, Canada, Czech Republic, UK.

Fig. 7

Fig. 7. Girl – two years old. Born 19.04.2011. SofCD and MBD. Therapy of varus deformity of shanks (A) (B) – by excluding of Heuter – Volkmann law – „no standing” and „no walking” three months - from January 2013 to April 2013. Result – normal axis of shanks (C) (D). Proper Mikulicz lines.



January 2013

April 2013

Syndrome of Contractures & Deformities (SofCD). Therapy for children in age 1 – 2.5.

Figure 7: Girl - two years old. Born 19.04.2011. SofCD and MBD. Therapy of varus deformity of shanks (A) (B) - by excluding of Heuter - Volkmann law - „no standing and „no walking three months - from January 2013 to April 2013. Result - normal axis of shanks (C) (D). Proper Mikulicz lines.

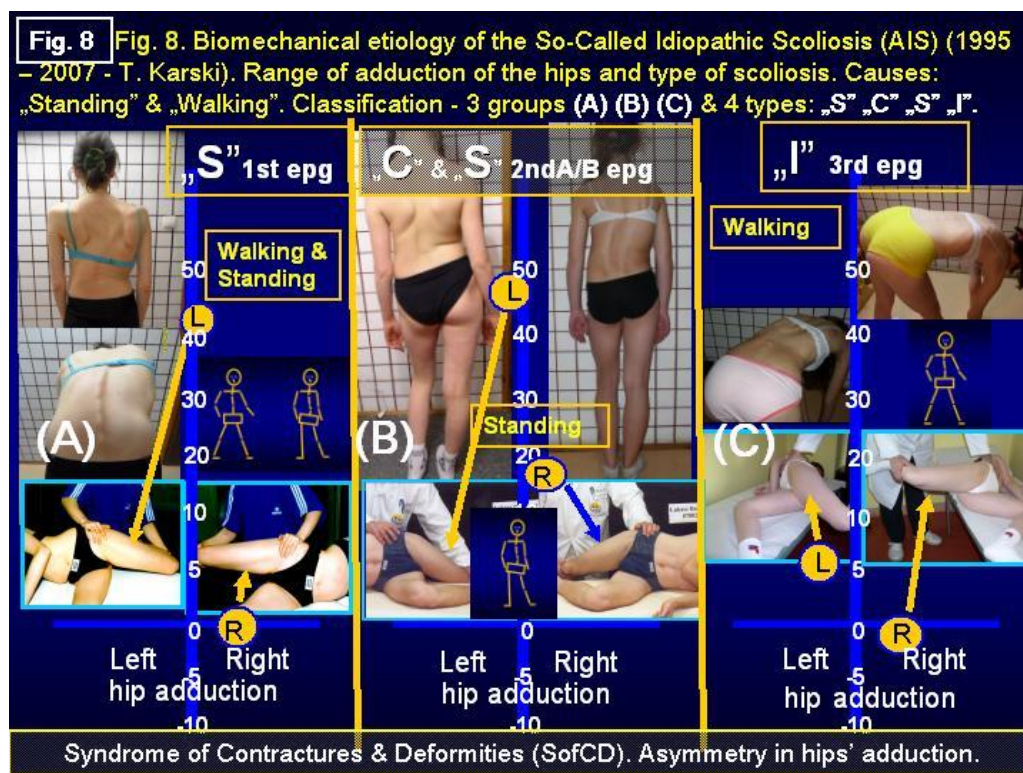


Figure 8: Syndrome of Contractures and Deformities (SofCD). Asymmetry in hips adduction. Biomechanical etiology of the So-Called Idiopathic Scoliosis (AIS) (1995 - 2007 - T. Karski). Range of adduction of the hips and type of scoliosis. Causes: „Standing and „Walking. Classification - 3 groups (A) (B) (C) and 4 types: “S” “C” “S” “I”.

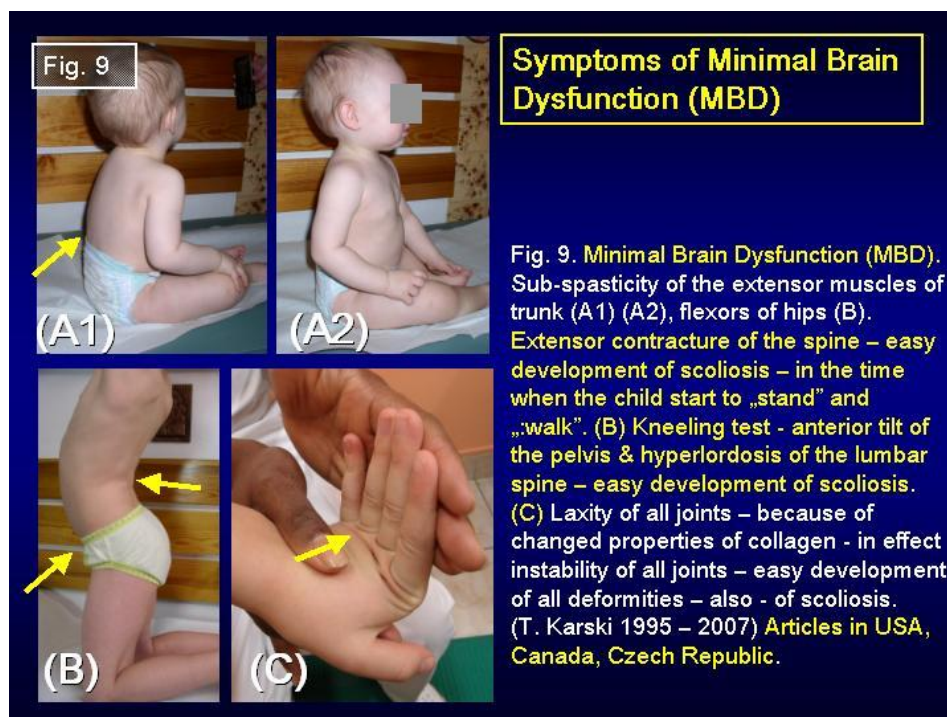


Figure 9: Minimal Brain Dysfunction (MBD). Sub-spasticity of the extensor muscles of trunk (A1) (A2), flexors of hips (B). Extensor contracture of the spine - easy development of scoliosis - in the time when the child starts to “stand” and “walk”. (B) Kneeling test - anterior tilt of the pelvis and hyperlordosis of the lumbar spine - easy development of scoliosis. (C) Laxity of all joints - because of changed properties of collagen - in effect instability of all joints - easy development of all deformities - also - of scoliosis.

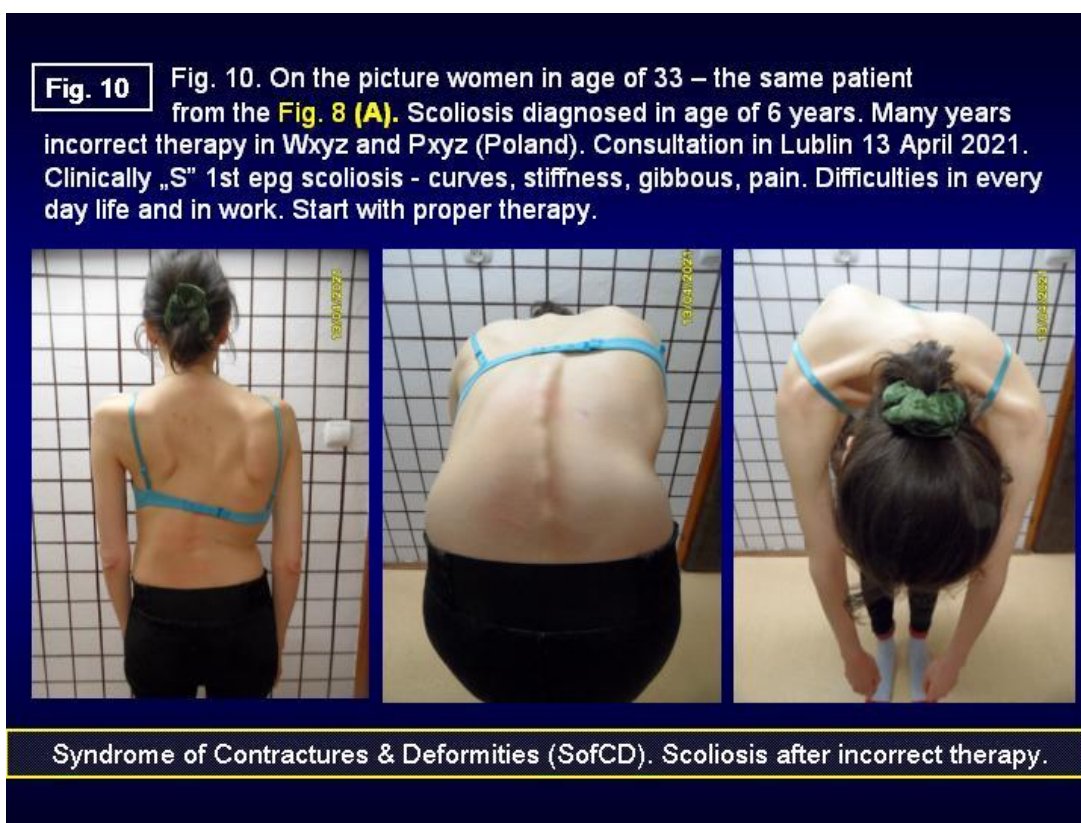


Figure 10: On the picture women in age of 33 - the same patient from the Fig. 8 (A). Scoliosis diagnosed in age of 6 years. Many years incorrect therapy in Wxyz and Pxyz (Poland). Consultation in Lublin 13 April 2021. Clinically “S” 1st epg scoliosis - curves, stiffness, gibbous, pain. Difficulties in everyday life and in work. Start with proper therapy.

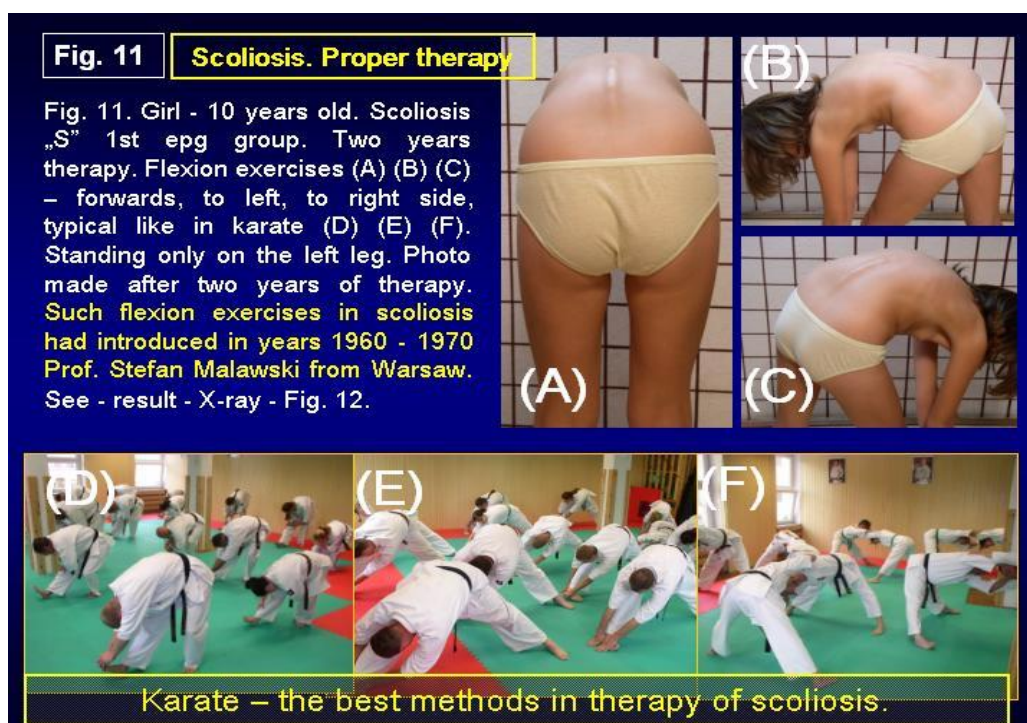


Figure 11: Girl - 10 years old. Scoliosis “S” 1st epg group. Two years therapy. Flexion exercises (A) (B) (C) - forwards, to left, to right side, typical like in karate (D) (E) (F). Standing only on the left leg. Photo made after two years of therapy. Such flexion exercises in scoliosis had introduced in years 1960 - 1970 Prof. Stefan Malawski from Warsaw. See - result - X-ray - Fig. 12.

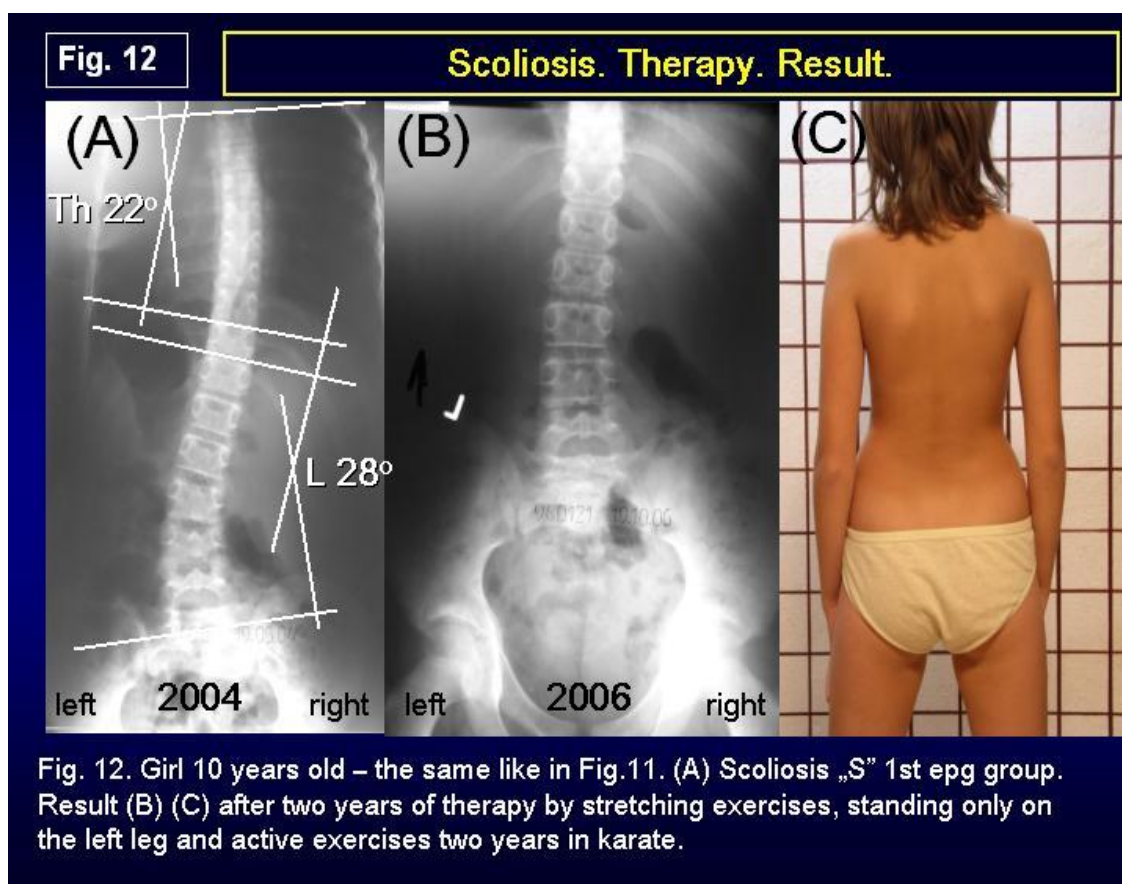


Figure 12: Girl 10 years old - the same like in Fig. 11. (A) Scoliosis “S” 1st epq group. Result (B) (C) after two years of therapy by stretching exercises, standing only on the left leg and active exercises two years in karate.

Clinical Examples of Pathology Connected with SofCD Recommendation of Therapy

SofCD is mostly “left sided” and is a result of the first position of the fetus during pregnancy. Fetus is placed in a position with spine on the left side and with the head placed towards the bottom of the mother’s uterus. This type of positioning occurs in 85%-95% of all cephalic presentation pregnancies (Prof. Jan Oleszczuk, Lublin and all gynecologists on the world). This position has a particular influence on the range of movement of hips and axis of spine.

Clinically these asymmetries were described precisely by Prof. Hans Mau as the “Seven Contracture Syndrome” (1960-1970), what we had confirmed in our material in big program of examination of newborns in the Lublin Gynecology and Nursing University Departments in years 1986-1988 and in all next years. We could confirm all observations of Prof. Hans Mau. There are:

1. Asymmetries in shape of the body
2. Position and range of joints movements
3. Axis of the neck
4. Axis of whole spine
5. Range of abduction of hips
6. Anatomy of feet
7. Position of pelvis
8. Axis of shanks

This eighth deformity, namely “varus deformity of shanks” we added to “Sevens Contracture Syndrome” and we started to say “Syndrome of Contractures and Deformities” (SofCD) - definitively in 2006.

Basic Information About Hip Dysplasia

Hip dysplasia appears in three pathological conditions [15,19,22,28,30-35,43-52,68,74]:

- A. In Syndrome of Contractures and Deformities (SofCD) - 90 % of all cases in Poland
- B. In the situation of general laxity of the joints (5 % - 10% of all dysplasia cases in Poland) laxity in connected with MBD first communication - Prof. Tibor Vizkelety - Hungary
- C. In children with MBD - because of spasticity or sub-spasticity of adductor muscle of hips (5 % of all dysplasia cases in Poland)

Hips Dysplasia

Basic cause of dysplasia of hips is the shortening of the adductor - mostly left side. Pelvis is in an oblique position. This shortening of hip adductors what we also called "contracture" is the cause of - Developmental Dysplasia of Hip [DDH] (description of Professor Predrag Klisić - Yugoslavia). This deformity must be fully cured in the first two years of life. Dysplasia of hip, or hips appears so regular that Prof. Marian Koszla from Warsaw (1960-1970) has said that "dysplasia" - can be seen as "a physiological status of hips", because it appears so frequently. In therapy it is important - proper - and never incorrect (Fig. 2) nursing of the child with full abduction of hips (Fig. 3) or even using of orthopedic abduction devices, sitting in abduction of hips in karate described as "butterfly position" (Fig. 4) and allowing to stand and walk only after 12 months of life never earlier, if clinically and in sonography or X-ray the hips are fully normal. Hips in children should be cured fully in 100 % - because not fully cured in adults are very frequently with arthrosis symptoms.

Head

We very frequently observe plagiocephaly the asymmetry of the shape of the head. This deformity if not treated in the childhood can be seen in adults. Please pay attention very often we can see such people in our surroundings or on the TV people with asymmetries of face, the head is not in a straight position, but leaning left or right.

Wry Neck

This deformity in connected with plagiocephaly. We can diagnose shortening of Sterno-Cleido-Mastoideus muscle with full symptoms of wry neck. The conservative therapy of plagiocephaly and wry neck, and the only proper one, is rotation-stretching of the head which is turned to the "wry neck side" (Fig. 5). We have mentioned this therapy in our publications in Germany and in the USA [15,19,22,28,30-35,43]. We introduced this therapy in 1974. Earlier all cases of wry neck, in Lublin, were operated [10]. Shanks varus deformity (Fig. 6, 7). In 2006, in Lublin, we added the varus deformity of the shanks to the SofCD. In all years of activity of our Department (the University Orthopedics Department in Lublin, funded in 1954 by Prof. Stanislaw Piatkowski and Prof. Józef Kaminski - both delegated from Poznan to Lublin by Prof. Wiktor Dega we had to operate every case of this deformity. In 1981 we started to treat the varus deformity by conservative methods, inspired by the Heuter-Volkmann law.

We know that the condition of progression of varus deformity, and other deformations of the axis of legs, is standing and walking. We have thus come to the conclusion, when the Heuter-Vokmann law will not be acting on the limb - proper axis should come to normal value. Therefore, since 1981, for children with varus deformity of shanks we recommend: not to stand and not to walk two or three months. The parents willingly perform such therapy instead of operations. In the following years we could observe positive results in 100% of cases - the axis returns to normal (Fig 6, 7). The optimal age for such therapy is from 1 to 2.5 years old [15-44].

Spine

In SofCD there is also asymmetry of axis of spine. The "infantile scoliosis" is the deformity - easy to treat - and this point of view had present also Prof. Hans Mau. According to our knowledge - the "infant scoliosis" is not "idiopathic scoliosis". Here - I would like to mention again, that asymmetry of position of parts of the body and asymmetry of axis of spine - are fully a result of SofCD. The causes of "idiopathic scoliosis" are described in the next chapter.

Idiopathic Scoliosis Research

For more than two thousand years the etiology of "idiopathic scoliosis" has not been known. This spine deformity constitutes 80% of all "scoliosis cases" 1984 - 2007 (Fig. 8-11) [11-44]. The etiology has been described - only in the remaining 20% of cases. The biomechanical etiology of the "so-called idiopathic scoliosis" was definitively described in the years 1995-2007. A new

classification was created and the rules of a new therapy and causal prophylaxis have been described as well. This knowledge is very important for all people in the world - because enables causal prophylaxis. Here we want to repeat - in SofCD - there is an asymmetry of hip movements. In the right hip - the adduction in straight position of joint is limited (Fig. 8). Further influences are connected with function - permanent standing 'at ease' on the right leg and walking.

Explanation of the Biomechanical Influences in the Development of So-Called Idiopathic Scoliosis

Etiology - first, there is asymmetry of movement of hips - next - there are "biomechanical influences". The asymmetry is a symptom of "Syndrome of Contracture and Deformity" (Fig. 8). In the right hip adduction in extension position of joint and internal rotation is smaller. Next, there is an influence of standing 'at ease' on the right leg and walking. Scoliosis develops in connection with:

- A. "Walking" - in two groups in Lublin classification. Explanation - during walking the absent movement of right hip is compensated by the "rotation - distortion movement" in pelvis and spine which causes stiffness of spine.
- B. "Standing 'at ease' on the right leg" - also in two groups of scoliosis. Why? Standing on the right leg is permanent, because of the limited adduction of right hip it is easier and less tiring than on the opposite side. The spine deformity starts to form as early as at 2 or 3 years old. After permanent standing - a fixed lumbar left convex scoliosis appears, and in some cases a thoracic right convex curve

Additional causes. In some children with scoliosis, we observe also the symptoms of Minimal Brain Dysfunction (MBD), which has an influence in the development of spine deformity. There are (Fig. 9):

- a) Extension contracture of spine
- b) Anterior tilt of pelvis
- c) Laxity of joints
- d) All these abnormalities make the development of scoliosis easy

Classification

1. Scoliosis "S" - double curves, spine stiff, (3D). Rib hump. Causal influence: "walking" and "standing 'at ease' on the right leg". In some cases, "lordoscoliosis". First symptoms appear at the age of 5-7 stiffness in Th 6 - Th 12 - next curves. Model of hips movement in straight position of joints: maximally limited adduction in right hip, full movement in left hip. Only this type of spine deformity is described in the Internet (Fig. 8).
2. Scoliosis "C" 2nd/A epg - one curve. Spine flexible (1D or 2D). Causal influence: standing 'at ease' on the right leg". First symptoms at 10 - 12 years old. Model of hips movement in straight position of joints: right hip - minimally limited adduction, full movement in the left hip. In the Internet it is often described as "paralytic scoliosis". This type of scoliosis very frequently causes "back pain syndromes" in adults.
3. Scoliosis "S" 2nd/B epg - two curves, (2D or 3D). Spine flexible. Causal influence standing 'at ease' on right leg - plus laxity or harmful previous therapy. Some types are "kiphoscoliosis". Model of hips movement in straight position of joints: right hip - minimally limited adduction, full movement in the left hip. This type of scoliosis very frequently causes "back pain syndromes" in adults
4. Scoliosis "I" 3rd epg. Only stiffness of the spine, (2D or 3D). Causal influence only "walking". Till 1984 never described as scoliosis.". Model of hip movement in straight position of joints: right hip - maximally limited adduction, left hip considerably limited movement. This type of scoliosis - because of the "stiffness" often causes problems in practicing sports in youth and back pain in adults.

Therapy and Causal Prophylaxis of So-Called Idiopathic Scoliosis in Points (Fig. 10-12)

1. Obtaining of full movement of right hips by stretching exercises
2. Flexion exercises of spine - forward, to the left and to the right to obtain full range of movement in all directions
3. Standing 'at ease' only on the left leg
4. Sitting relaxed - never "straight up"
5. Rest and sleeping in embryo position
6. Active participation in sports - the best karate, aikido, taekwondo, tai chi and other similar

7. The therapy or prophylaxis should be introduced very early at 5 - 8 years old
8. The therapy should be extended till end of growing period of the child
9. In adults with fixed scoliosis and even a big deformity - the new therapy can reduce the pain and ensure better activity at home and at work

Discussion

Among various causes of pathology at orthopedic patients two groups occur very frequently nowadays. Asymmetries in position and in range of joints movement called Syndrome of Contracture and Deformities according to Prof. Hans Mau - not treated - can lead to problems at the adult age. Minimal Brain Dysfunctions - fully described in other article of JOSR leading to a wrong position of the body parts, leading to limitation of joint movement and general laxity, if not treated can also lead to problems in adults. Of course, we can observe other etiological influences in orthopedic pathological cases, however the aforementioned conditions are often "overlooked" and not treated. I would like to emphasize that the therapy through proper nursing and stretching exercises is extremely simple, easy and are highly effective in improving health and wellbeing of adults.

Conclusion

1. Syndrome of Contracture and Deformities (SofCD) appears in the fetus in specific conditions - big size and length of the fetus and disadvantageous body build of the mother
2. Symptoms of SofCD are in position of spine, in axis of legs and in range of joints movements
3. In situation of asymmetry of hips movement, specially in adduction of hips in their strait position, the "So-Called Idiopathic Scoliosis" can develop through function "permanent standing 'at ease' on the right leg" and "walking"
4. The best methods of therapy of SofCD are stretching exercises of shortened muscles, tendons and capsules
5. Proper nursing of newborns and babies - in full abduction of hips - is crucial. Standing and walking can be allowed after 1 year old, if the hips joints are properly developed clinically and in ultrasound or radiography
6. In therapy of So-called Idiopathic Scoliosis - standing 'at ease' only on the left leg and flexion, stretching exercises - typical in karate, taekwondo, aikido, kung fu or yoga are important

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Conflict of Interest

The authors have no conflict of interest to declare.

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