SOSORT

INTERNATIONAL SOCIETY ON SPINAL ORTHOPAEDIC AND REHABILITATION TREATMENT

NEWSLETTER Nº 3-2010

EDITORIAL:

Dear member of the SOSORT,

As we advance you in the last edition, finally, we are able to offer you the interview to Dr. Lenke online. Its a really interestig interview to one of the most important current surgeons who insists in the importance of the cooperation between all profesionals working in this field.

Another important group of profesionals working into the understanding of the scoliosis and other deformities of the spine are basic scientists. One of them is Dr. Stokes whose work in this field is wellknown. Its also an honor to offer you this interview who encourage us to work closer to them with the same goal, to help our patients.

Some studies have been carried out by members of the SOSORT and guided by the BOARD. We will try to offer you some news soon about it. Others are recently published in our journal as you can see in our section: SOSORT NEWS

We want to remind you the next SOSORT meeting will be held in Barcelona. We will try to report you some news about this event in the next edition.

Finally, the Newsletter Comittee wish you a Merry Christmas and a Happy New year in the name of SOSORT.

M. Villagrasa and P. Pizzetti.

INTERVIEW TO DR. LENKE:

Dear members we are glad to present you the interview to Dr. Lenke hang on our website www.sosort.mobi . Please click in the folowing link to watch it: http://www.sosort.mobi/index.php?option=com_content&view=article&id=80&Itemid=83

Hoping you enjoy watching it as we do preparing and doing it!! Thanks Dr. Lenke.

INTERVIEW TO DR. Ian STOKES:

Dear Dr. Stokes, thanks for accepting this interview. If you are ready we go ahead with it:

1. *At the beginning your research career you were focused on studying how forces react in the lower limbs. What made you change your research into the spine? And more exactly to start research programs related to the scoliosis field?*

Every researcher should ask the question: where is there the greatest chance to make a contribution? It is true that I started my career in biomechanics by studying foot problems, and I think we were able to make a contribution to understanding of effects of diabetes, as well as hallux valgus. But spinal problems probably represent a greater need. In the area of spinal biomechanics the risks for a researcher are high, because the two major problems – back pain and deformity - are plagued by lack of understanding of the original causes. Back pain represents a huge problem for which there are many causes including injury, degeneration, and osteoporosis. Of course biomechanics should be able to help in all of these, but actually I think that progress has been very slow. Scoliosis and biomechanics may be more directly linked if we consider that there are two stages in scoliosis development – initiation (etiology) and subsequent progression. The pattern of progression seems to be very similar after a wide range of initiating causes: neuromuscular, congenital and idiopathic.

2. *In recent years you are concentrating on the intervertebral disc and many papers where published about it. What makes you focus in this topic?*

A scoliosis curve results from wedging of both the vertebrae and the discs. So it is important to understand the causes of both components. In terms of the biomechanics of scoliosis progression, we probably know more about how mechanical forces influence vertebral growth, but it is also very important to understand how the discs respond to altered mechanical load too. I have been using the rat tail model to investigate how altered and asymmetrical loading as well as reduced mobility affect the loss of disc height associated with the wedging deformity of discs.

3. *What did you expect before this work?*

I knew it would be difficult to study how intervertebral discs become deformed in scoliosis for several reasons. The rat tail seemed to be a good platform to look at the biomechanics, since it is accessible, and the tissue changes occur quite rapidly (in weeks) relative to those in humans (time scale of years) and we expected to see either degeneration or remodelling of the discs that would represent what happens in scoliosis.

4. What was your reaction after this?

The rat tail model is pointing strongly to reduced motion (mobility) of the disc as a key factor associated with loss of disc height. But in the human context, one huge remaining question is why curve progression more or less stops with cessation of growth at skeletal maturity. We think we know why wedging deformity of the vertebrae stops progressing when growth ceases, but why would the disc deformity stabilize too?

5. How did this reorient your investigation?

Since most of the loading on the spine results from activation of muscles, it is very important to get a better understanding of how muscles are recruited, and how this recruitment pattern is altered when the spine is curved laterally. Biomechanics tells us that there is no unique pattern of muscle forces to achieve any given task – you have a choice about which muscles to recruit. This variability in muscle activation strategies may be the key to understanding how the rate of curve progression differs between individuals.

6. How is your interpretation about scoliosis changing?

The concept that there are two stages in the development of a scoliosis – an initiation (aetiology) and a progression seems very logical now. Furthermore, I think that the role of biomechanics in the second (progression) phase is widely accepted now. The pattern of progression during the period of rapid adolescent skeletal growth is very similar in all kinds of scoliosis (congenital, neuromuscular and idiopathic).

7. What can you explain to us about the growing period and its diferenciation relative to the implications for the disc? And what does this imply for etiopathology theories?

The question why disc wedging stabilizes at skeletal maturity should be studied. Equally, the question why some scoliosis curves that are small at the onset of a growth spurt progress and others do not is crucial to understanding pathomechanism, as well as being the biggest challenge faced by clinicians.

8. How will this modify the clinical approach?

If biomechanics really is a key element responsible for scoliosis progression, then this clearly supports the use of bracing and other conservative approaches to managing progressive deformity. But there are two additional components required: (1) braces as presently prescribed, perhaps because of difficulties with

patient compliance, have a questionable efficacy. (2) early identification of patients at risk for progression is prerequisite for treatment approaches involving early and minimally invasive (or minimally destructive) interventions if we are to avoid over-treatment of patients who actually have benign deformity.

9. Do you think that we (basic scientists and clinicians) can really lead to understand the cause of scoliosis? Sometimes seems that this two specialties are following parallel paths and they have very few crossroads. What do you think about it?

At present the natural history of idiopathic scoliosis is very poorly understood. By this I mean that we do not know the specific phenotypes of patients who are likely to have a progressive curve. The studies showing quite low concordance of scoliosis in monozygous twins point to the huge complexity of this problem. So there should be a huge potential for collaboration to collect longitudinal data on cohorts of children, in order to identify better the risk factors for progression. Such a collection of data should not be a 'fishing expedition' – it should be designed around the best hypotheses that we have – from genetic, biochemical and biomechanical theories. Clinicians and basic scientists could collaborate to design the data collection and analysis to test plausible hypotheses. The SRS membership is accustomed to reporting all their surgical results to a central registry. Perhaps they could be encouraged to collaborate in a comprehensive natural history study too.

10. How is your opinion can we strength this link?

Of course SOSORT and other societies have a key role in attracting clinicians to study the patients they care for. Attracting basic scientists into this field may be difficult because it is often viewed as a high-risk field professionally in which it is difficult to obtain funding, and bright young researchers are under pressure also to generate results. Many scoliosis studies have produced negative findings, and these don't easily satisfy the funding and publication criteria. So the link can be strengthened by scientists and clinicians collaborating to design research studies that have a high impact and high probability of producing important new clinical insights.

Thanks again for your colaboration Dr. Stokes.

SOSORT NEWS:

PAPERS:

Dear members, after your collaboration, we have published in our journal the 8th SOSORT consensus paper called: **Terminology: glossary including acronyms and quotations in use for the conservative spinal deformities treatment**. See in this link
http://www.scoliosisjournal.com/content/5/1/23

2ond AWARD WINNER: C. RIVARD

If you are interested in the second Award gave in Montreal tittled: **SpìneCor treatment for juvenile Idiopathic Scoliosis,** you can read it full text in our journal. Please click in this link:
http://www.scoliosisjournal.com/content/5/1/25

SCIENTIFIC EVENTS:

1st International Congress Scientific Testing of Orthotic Devices - March 22-26 Aix les Bains FRANCE

8th SOSORT Annual Meeting – May 19-21, 2011 Barcelona, SPAIN

World Confederation for Physical Therapy - June 20-23, 2011 Amsterdam Netherlands

LINKS :

Scientific Societies

- www.sosort.org
- www.sosort-lyon.net
- www.spine.org
- www.srs.org
- www.britscoliosissoc.org.uk/
- www.bsrf.co.uk
- www.gss.it
- http://www.boa.ac.uk

Patients associations

- www.escoliosis.org
- www.scoliosis.org
- www.sauk.org.uk
- www.scoliosis-assoc.org
- www.scoliosis-info-forum.de
- www.scoliosis-australia.org
- http://scoliosi.forumfree.net
- www.SpineKids.com
- www.scoliosiscare.org

CONTACT US:

SOSORT'S SECRETARY: **sosort@isico.it**

NEWSLETTER COMMITTEE: **newsletter@sosort.net**