

## **Practice for Logopedics R. Stapf**

O6.02.06

### **Empirical and user's report concerning the logopedic application of the intra-sonic wave instruments manufactured by Novafon.**

I have been working with the SK-1 for approximately 5 years. In the last few years also with the SK-2 and the Sonosage. In a non-professional capacity, I also make use of the magnetic probe. Initially, the therapeutic application was limited purely to the gentle loosening of the nape and shoulder areas. Gradually, supported increasingly by the positive feedback from my patients, I employed the instrument in treating a large variety of complaints and in various parts of the body.

For me, the intra-sonic wave instrument became of significant therapeutic importance when, due to the holistic picture of a complaint, I was of the opinion that I really should perform treatment daily. However, as we are all aware, a maximum of only three sessions per week are possible in private practices. If faced with the fact that, as a rule, the patients find themselves receiving treatment constantly, then the timeframe of the treatment in each individual case becomes painfully short. As the SK-1 and the SK-2 are thankfully both easy and uncomplicated to apply and to handle, I recognised the opportunity for both me and my patients to maintain the balancing act between medical necessity and political cost-cutting measures in the health care system. Patients and their relatives are offered the possibility to cooperate usefully in a domestic environment. It is not my aim to promote the general sale of these instruments, but rather to ensure the quality of my work in the field of logopedics. However, for my part, these devices do constitute a valuable aid in supporting conventional therapeutic work.

Using case examples, I would like to state possible applications.

**Delayed apoplexy in children:** Benedikt B. was brought to me by his mother at the age of 4 years and 10 months. At that point in time, distinct signs of dyslalia were apparent. His range of articulation was seriously impaired. Sibilants could not be produced. Benedikt was incomprehensible for others and communicated through mime. Massive dyspraxia in the area around tongue and lips was also evident. In the first session of treatment, it was mainly the disturbance in the locomotion planning of the tongue and lips that was worked upon. This defect was at times so

advanced that even the sequences of motion necessary for swallowing were affected. At the age of almost 5 years, the boy exhibited signs of tongue movements (poking) when swallowing associated with early childhood. Eating from a spoon was troublesome, with the food not being taken cleanly from it. This proved not to be a case of conventional myofunctional disorder with hyposensitivity in the oral-facial area. The boy had distinct problems acquiring new patterns of movement and to coordinate these with other movements. Benedikt exhibited distinct compensatory mechanisms. This led to tension in the pharynx and in the back third of the tongue. Consequently, there was heavy retching when doing oral motor exercises. The first session of treatment was conducted without using the intra-sonic wave device. A distinct improvement of the motor skills in the mouth and of the patterns of movement when eating became evident. Regarding phonetics, Benedikt produced the F sound inconsistently following the first session of treatment, the K and R sounds equally inconsistently. The self-initiated sign language already used by the boy disappeared and he attempted to communicate using spoken language more and more.

Following a four month break from therapy, the second phase of treatment was carried out. Due to the fact that the retching had hardly improved despite continuing oral motor training, I advised the mother of the child to purchase a SK-2 instrument. From then onwards, she carried out treatment daily for several minutes. Benedikt wielded the sonic head himself on the entire region of the face and in the neck area. According to his mother, the boy would sense instinctively that the treatment was doing him good, so that Benedikt in most cases has to remind her to treat him. After treating himself (approx. 5-8 minutes), his mother placed the instrument specifically upon the musculus digastricus (below the chin) for approximately a further 2-3 minutes in order to loosen the tongue. Already after two weeks, Benedikt's mother announced that a dental appointment had been made. Previously, dental treatment had not been possible due to Benedikt's heavy retching. This retching when doing oral motor exercises decreased as did the massive inconsistency in the spoken language. Meanwhile, the boy is capable of producing all phonetic sounds. In some case, these are still being produced inconsistently due to existing verbal apraxia. Benedikt finds it particularly difficult to pronounce connecting sounds. Speaking exhibits significant exertion and a quest for the correct oral motor movements. With the aid of the SK-2 instrument, significant improvement has been achieved regarding intelligibility and exertion when speaking. Treatment has not yet been completed, but already Benedikt's mother is convinced of this instrument's success.

### **Dysphagia in pharyngeal carcinoma and radiation therapy:**

Mr O. (62 years of age) came to my practice due to dysphagia. He gave an account of a previous history of tumour tonsillectomy and functional neck dissection approximately three and a half years previously. Since then, he had had his main

meals fed artificially via a PEG tube. Swallowing liquids and viscid food stuffs was possible. For solid nourishment, however, the production of saliva was insufficient. Due to the pressure exerted on the region of the esophagus, swallowing proved impossible. The food often had to be regurgitated. The tongue was massively impeded in its movement, both to the side as well as to the front. Attempts to extend the tongue often resulted in cramp starting in the tongue's anchoring muscles and leading to the joints of the jaw. The extent to which the jaw could be opened was significantly inhibited, and the elevation of the larynx was, due to tissue badly damaged by radiation and lymphatic action, largely insufficient. Lymph drainage being dysfunctional, edematous swelling in the entire region of the face, including and extending over the area surrounding the eyes, as well as in the intraoral region could be seen. Particularly, the mucous membrane in the cheeks and the periodontal tissue had been affected as a result. The logopedic treatment consisted of a home exercise plan individually designed to improve the movement of the patient's tongue and jaw. In the session, the larynx was loosened manually in order to improve its elevation. In consultation with the physician, a manual lymph drainage massage to promote lymph drainage took place. Already in the first week of treatment, I was able to convince Mr O. of the necessity of the SK-2 device. From then onwards, treatment was carried out daily in the neck region and in the area surrounding the larynx. Likewise, I instructed the patient about just how the tongue could be loosened externally. The duration of treatment lasted approximately 15-20 minutes daily. As the sonic waves are able to penetrate the tissue, treatment led to a significant loosening of the callous oesophageal sphincter. After 60 therapy sessions, Mr O. was generally able to have solid food stuffs. There are still limitations when it comes to food requiring intensive mastication (fibrous meat) or which is extremely dry (e.g. crisps). All in all, as a rule a noticeable improvement in the patient's quality of life was achieved with the intra-sonic wave instrument.

### **Laryngectomy and bilateral neck dissection in conjunction with a larynx-carcinoma relapse.**

Mr B. (55 years old) came to my practice in January 2003 because of dysphagia and to acquire an ersatz language. In April 2001, an extended tumour tonsillectomy and bilateral dissection of the neck had been carried out. In June 2001, radio therapy followed, then in Nov. 2002 a laryngectomy and the implantation of a Provox voice prosthesis due to a relapse. In that first visit, Mr B. exhibited substantial lymphatic deposits in the face, neck and mouth region. Movement of the tongue was impaired and was incapable of transporting food stuffs. Due to surrounding tissue damaged by radiation, the swallowing muscles involved were inhibited. Solid food could be salivated due a damaged glandula sublingualis. When drinking coffee, there was

significant choking and expulsion from the stomatal opening. Producing sound through the oesophagus via the cannula proved impossible.

In the first instance, treating the problem of swallowing was the priority. Together, intraoral lymph drainage treatment (in consultation with a physician), mouth motor exercises and manual loosening tissue damaged by radiation were carried out. Parallel to that, the SK-2 instrument was used by the patient at home for 15-20 minutes daily, whereby the sonic head was applied above all to both sides of the neck, around the joints of the jaw and below the chin. After a few weeks, the tissue in the area around the chin had been loosened to such an extent that an external sound carrier (Serfox) could be inserted. Due to the fact that the tissue surrounding the region of the upper oesophagus was becoming more and more relaxed, the patient later tended towards an ersatz voice, whereby he adopted both the inhalation as well as the injection methods. However, Mr B., expressed his preference for the esophageal voice over the Provox cannula. For a long time, sound production via the cannula was impossible. Air could simply not be forced through cannula. With the aid of the SK-2 instrument, extra breathing exercises were added. During these, two Novafon instruments were, for example, placed on the rear flanks. Mr B. was directed to breathe into that area (deep breathing). This, and similar, exercises were carried out until such time as sound production via the Provox cannula worked. Mr B. also said that the SK-2 instrument had had a positive expectorant effect. Laryngectomy patients often suffer from thick mucus, which is difficult to expel. The intra-sonic wave instrument performed well in rectifying this.

**Paralysis of the recurrent nerve:** Mrs B. (66 years of age) came to me suffering from paralysis of the vocal folds on the left-hand side following a struma operation. Due to the fact that there was no improvement in the voice within four weeks, logopedic treatment was initiated. The patient also complained about difficulties when swallowing liquids. At the time of examination, her voice was highly aphonic and tended to be elevated. In addition to conventional logopedic approaches like, for example, breathing exercises, phonation exercises, manual techniques etc., work was carried out on a weekly using the SK-1 instrument. Here, the sonic plate was placed directly on the left-hand side of thyroid cartilage. At first, the paralysed vocal fold would only swing passively. Then, as a rule, phonation exercises were introduced in order to achieve the reinnervation of the paralysed side. Already shortly after treatment, an improvement in the voice quality could be observed. In additionally, the sonic plate was lead along parallel to the larynx vertically from top to bottom in order to relax the compensating suspending muscles of the larynx. After the twelfth session of therapy, the voice was completely restored. Only residual roughness remained, which was treated during the remaining eight of therapy.

**Dysphagia following subarachnoid hemorrhage cerebellar infarction, bilateral paralysis of the vocal folds, facial paralysis (left), buccofacial apraxia, oral dyspraxia.**

Mr G. (66 years old) came to my practice diagnosed with the above. He had suffered his second stroke. From the first stroke, only a slight speech impairment and temporary facial paralysis resulted. At the time of treatment, the facial paralysis (left) was pronounced to such an extent that the spasticity had led to a permanent squinting of the eyes. A PEG tube was in place because the patient was unable to carry out swallowing movements. When attempting to swallow saliva, only a pumping movement of the tongue was noticeable. In previous weeks, during periods in a hospital and rehabilitation clinic, the patient had regularly aspirated his saliva. A tracheotomy had been refused due to the ensuing restrictions on the quality of life. In Mr G's case, there was massive spasticity in the entire oral-facial area. After consultation with his wife, the SK-2 instrument was acquired. I treated the muscles of the entire face twice a week, in particular around the left eye, on the muscles of the jaw as well as on the neck and nape. Mr G's wife was introduced to all the possible therapeutic applications so that twice to three times a day she could perform relaxation treatment using the intra-sonic wave device, as well as conducting both intraoral lymph treatment and treatment to loosen the jaw. After the dysphagia had been completely rectified within several weeks, the bilateral paralysis of the lips was worked upon. Similarly, the SK-2 instrument was supportive in the treatment programme in the patient's home. After 38 sessions of treatment, the patient was released from therapy. Mr & Mrs G. and I agreed that this massive improvement would not have been possible without the strict domestic training plan supported by the intra-sonic wave device.

Finally, it remains to be said that using the intra-sonic device has become a permanent part of my job. Next to many other methods, treatment using intra-sonic waves is an additional possibility in achieving improvement in individual cases.

Regina Stapf,

