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## Theme of the coming issues:

- Burns
- Diagnostics I / Physiotherapy Education II

## Editorial - Complementary Therapy II

George WONG, Ivan YEUNG

The development of advanced physiotherapy knowledge and technology has increased our choice of tools for assessment and treatment, which facilitates the expansion of scope of our service. The sharing of experts from our last issue (Complementary Therapy Part I) has confirmed to us that to enhance our professional service quality, it is important for us to have continuous education (to learn new treatment techniques), to be open-minded (to utilize well-developed concepts and techniques from different cultures e.g. from the East) and to enrich the field with evidence-based research.

In this issue (Complementary Therapy Part II), we will continue to focus on these directions. Ms Lily Yuen and her physiotherapy team from Heep Hong Society will share with us their experience in using EndermoTherapy®. This is a treatment modality originally designed for scar treatment of burn patients and used in beauty industry, but turns out to be a feasible treatment option in treating children with soft tissue tightness (STT) problem. Ms Helen Luk from Queen Elizabeth Hospital will share with us her experience in utilizing Qigong as part of the physiotherapy treatment among patients with cancer.

We hope these two issues are useful in updating us with the current trend in the complementary therapy, and drawing more attention to the development and clinical applications of different complementary therapies.

## Our Facebook Page

In order to get the best connection with our members, Hong Kong Physiotherapy Association has launched a specific page in facebook. We will share the news, events, courses and other relevant information on our new facebook page regularly to keep you updated. All of us are welcomed to join through the following link.

<http://www.facebook.com/HKPhysioAssoc>

# Experience in Using Endermo Therapy® in Children with Special Needs

*Lily YUEN,  
Senior PT & PT team, Heep Hong Society*

Physiotherapists who work with children with developmental and movement challenges, such as cerebral palsy, developmental delay, developmental coordination disorder and autism, always spend lots of effort in fighting against soft tissue tightness (STT) in their treatment plans. STT is developed in many ways in these children, for example, 1) in muscle of hypertonicity, such as flexor muscle group of forearm in spastic quadriplegia; 2) in muscle used as a compensation for stability such as neck extensor group in those children with poor head stability, hamstrings in those with poor standing balance, and tensor fascia lata in those standing in wide base; 3) in multiple joint stiffness problems in some congenital conditions such as Apert's syndrome; 4) in surgical scars especially those large ones resulted from major abdominal surgeries during infancy. The scars run horizontally across abdomen and disturb the alignment of this core postural muscle group. STT decreases the extensibility of muscle, myofascial layer and connective tissue, in turn; further limit free active movement of body and development varieties of movement patterns in early years. The well-established treatment techniques used to handle STT by physiotherapist includes passive stretching, active stretching, positioning, joint mobilization and myofascial release techniques. Among these techniques, passive stretching is used frequently because most of the children have limited compliance in self-stretching and active exercise. However, each one has its own limitations. Passive stretching is not popular to children clients because of the severe pain caused during the treatment.

## *Endermotherapy and the Machine*

Our team of physiotherapists started to use Endermotherapy to decrease STT in 2009 after we received a donation on a LPG Keymole 6 machine. Endermotherapy is a soft tissue mobilization treatment by the application of

LPG's CelluM6 Keymodule machine. The machine is designed originally for scar treatment of burn patients in France. According to the manufacturer, it is helpful in increasing blood and lymph circulation, softening scar tissue, and stretching contracted fibers. It is now vastly used in beauty industry for body sculpture and also used in various types of rehabilitation by both physiotherapist and chiropractor. Through treatment heads of different sizes, the machine gives a combination of powerful vacuum suction, variable speed and direction skin rolling and vibrating on fascial layer. It gives powerful pin-rolling and picking up effects. Patient feels like a negative-pressure massage. There are many treatment modes provided by the machine. Among those, we are now using "endospasm" "endotension" and "endostretch" mode. Generally speaking "endospasm" provides combination of vibration and suction; "endotension" provides suction and less vibration, and "endostretch" provides suction mainly. Automatic skin rolling is provided in large metallic treatment head but it is too large for preschool children. Small head with manual rollers are provided for treating small body parts. The smallest one can fit small fingers of children. The size of treatment head used depends on the body contour. It should not be too large to fail the vacuum suction.

## *Clinical Applications and Observable Effects*

From 2009 to present, we have applied endermotherapy on the trunks, upper and lower limbs of over 120 children with cerebral palsy, development delay, mental retardation, autism and congenital abnormality. They all have STT developed as secondary problem from impairments in neuromotor control, balance and musculoskeletal systems. One of our hypotheses in using endermotherapy is that it can increase the extensibility of STT through physical mobilization of fascia layer. We apply 15

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minutes on one targeted muscle including its belly, musculo-tendinous junction and its adjacent fascial areas that are involved in movement range. Gastrocnemius, for example, the adjacent fascial areas include both sides of Achilles tendon and sole of foot. In most of the children, immediate effect showed as floppy muscle belly on palpation and decrease in tightness on manual passive range of movement. We observe decrease in tip toeing in spastic gastrocnemius of a hemiplegic walkers, decrease in wide-base walking in one low tone aided walker with tight tensor fascia lata. In addition, the release of shorten antagonist facilitates the contraction of agonist. One example of this is gaining "chin-in" posture in a boy with mild delay after releasing neck extensor group and fascia around occipital cranial base. The other hypothesis in using endermotherapy is that it facilitates muscle contraction by releasing the tension in fascia wrapped around muscles. One clinical trial is on gluteus medius which functions as coronal plane pelvis stabilizer in single leg standing situation. We have many cases achieve immediate gain several seconds in static single leg standing balance which is not achievable in clinical training by gluteus medius strengthening exercise.

### ***Research Evidence in Improving Passive Range of Motion***

This year, PT team of Heep Hong society (HHS) worked with Dr Marco Pang of Rehabilitation Science, Polytechnic University, on a study "Effect of endermotherapy on ankle passive range of motion in children with cerebral palsy and other developmental disabilities". The result was presented in the 7th Pan-Pacific Conference on Rehabilitation on October 24. We compare the immediate effects of this treatment with conventional manual passive stretching on ankle passive range of motion. We have successfully recruited 54 children from special child care centres (SCCCs) and early education and training centres (EETCs) of HHS. The results show that the immediate effect of endermotherapy and manual stretching is comparable. There is some evidence that the effect endermotherapy is more long-lasting than manual stretching. In addition, it is found from clinical observation that children felt much less pain when receiving endermotherapy than manual stretching.

### ***Conclusion***

When comparing the endermotherapy and manual technique, our team found that the former seems can release the fascial layer which cannot be effectively done by hands. It can also largely decrease the discomfort cause in children and enhance the treatment effectiveness by increasing frequency and intensity. It is also more acceptable by parents and caregivers. Moreover, it avoids breaking rapport with children in treatment session. However, we still recognize the effect of passive stretching. The effect is doubled when we can apply stretching after and during endermotherapy. If resource is allowed, we would like to adopt both methods in our treatment.



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For enquiry, please contact Dr. Marco PANG  
Tel: 2766 7156  
Dept of Rehabilitation Sciences  
Hong Kong Polytechnic University  
Email: Marco.Pang@inet.polyu.edu.hk