

Face value

Facial nerve palsy is devastating, and rehabilitation places many demands on therapists as well as clients. Penny Gravill outlines the benefits of two specialist treatments which she offers on the NHS and more recently at a Satellite Centre for an independent provider.

I have worked in the acute sector at Aberdeen Royal Infirmary for 15 years, specialising in the field of acute neurosurgery since 1995. Some clients in this specialty have facial palsy following surgical removal of an acoustic neuroma. My role in managing any swallowing difficulties immediately post-operatively was clearly defined and manageable - but how to cope with the devastating effect of a face which won't work was another story!

Although its effects can be profound, acoustic neuroma is not that common; the British Acoustic Neuroma Association cites incidence as 1 in 80,000. Both the tumour itself and its surgical removal carry risk to the VIIIth Cranial Nerve, or Facial Nerve. As this nerve supplies a number of areas, damage can produce a variety of symptoms:

SUPPLY TO	SYMPTOM
Lacrimal Glands	The most usual symptom is a dry eye, but the other extreme (overwatering) may also occur.
Stapedius (a muscle of the middle ear)	Hyperacusis (an acute sensitivity to hearing)
Anterior 2/3 of the tongue	Taste affected
Submaxillary and sublingual salivary glands	Saliva production disturbed
Facial muscles (subtle role in swallowing and to prick the ears back; very obviously in facial expression and movement)	Swallowing and facial expression / movement affected.

The rehabilitation of facial palsy is frequently associated with our colleagues in physiotherapy but I am a firm believer that as speech and language therapists we are as well equipped to meet the challenges. The physiotherapist is much more knowledgeable about the transmission of nerve impulses and the functioning of muscles but we have substantial understanding of the anatomy and physiology of the head and neck and can soon revise and extend our knowledge accordingly.

READ THIS IF YOU

- ARE INTERESTED IN BIOFEEDBACK TOOLS
- FEEL SECURING FUNDING FOR EQUIPMENT IS TOO DIFFICULT
- MIGHT CONSIDER INDEPENDENT PRACTICE

Promising

The initial frustration and limitations of treating facial palsy quickly became apparent and I was left wondering what else could be done. Diana Farragher, a physiotherapist based in the Manchester area, had pioneered and developed a treatment for facial palsy using trophic electrical stimulation and the results were promising to say the least. She had done a couple of study days in Aberdeen by the early 1990's and there appeared to be some hope of treating this debilitating condition.

In order to appreciate the principles of trophic electrical stimulation, it is important to understand the function of the nerve and the muscles it serves. In a normally functioning system the nerve feeds the muscle and keeps it in good health. When a nerve is damaged, the muscle undergoes degenerative changes. The amount of muscle function lost is dependant upon the extent of nerve damage. By applying trophic electrical stimulation, the atrophy can be prevented and the nerve encouraged to grow back into healthy muscle. The client begins to notice better resting symmetry as the condition of the muscle improves, which has untold benefits on self-esteem and confidence because, as well we know, so many judgements are made (literally) at face value.

Learning to apply the trophic electrical stimulation is not difficult for clients; it is a matter of sticking on electrodes, turning on the machine, setting it to the correct level and letting the machine do the work. Clients hire

the equipment (pictured) so they can use it independently at home.

The road to recovery is not straightforward and, as the nerve recovers, clients can develop a condition called synkinesis. This is the stage where the nerve has essentially recovered but mass movements occur and the nerve fails to 'switch off'. So, for example, instead of just one branch being activated when the client tries to close their eyes, the mouth also moves on the affected side. The face characteristically feels tight and so the weak eye - having once drooped and appeared larger than the normal eye - now appears smaller. The mouth may turn up in a sneer where before it had drooped. Trophic stimulation continues to encourage accurate movement but a different programme is also used to encourage the nerve to shut off and relax.

Where to go next

Having learned the principles of this form of treatment I still felt I was groping in the dark; clients made progress and I didn't know where to go next. I attended a course at Diana Farragher's clinic, The Lindens, near Manchester. As well as active exercises, I was introduced to the benefits of another tool, surface electromyography (sEMG). I was instantly a convert and set about acquiring funding to purchase one for our speech and language therapy department. (Needless to say this was not easily achieved!)

The facility of managing clients with the use of electromyography has made my practice a lot easier and effective. It allows accurate objective measurement of nerve function and helps set goals for treatment as well as measuring change.

Electromyography is a painless procedure where electrodes are attached to the face, ideally with the client lying down, and the function of the weak side is compared to the good side in the temporal, zygomatic, buccal and marginal mandibular branches of the facial nerve. The readings are viewed on the computer screen in the form of graphs and these can be analysed statistically. Electromyography allows precise objective measurement of nerve function, better planning and goal setting and more accurate prognostic information. It is a significant boost to a client with an apparently completely floppy face to see the graph change as the nerve tries to tell the muscle to move. Equally, synkinesis can be detected and managed.

As well as a diagnostic tool, electromyography can be used for treatment in the form of biofeedback. Until the use of biofeedback I relied upon a mirror which allows the client to see what they are doing rather than encouraging them to feel what they are trying to achieve. Bio-

feedback allows the client to learn to feel a movement again and to balance it by matching the two sides of the face in an expression. In the same way, if they are experiencing synkinesis and the muscle is not relaxing, they can be taught to feel the relaxed and more normal resting levels.

Many skills

There is no quick fix for facial palsy and clients do not move from the list quickly; we are talking years not months. It draws on many of our skills to work with these clients as the effect of facial palsy is devastating both physically and psychologically. Candid and comprehensive information from a client's perspective is available on a blog by Jon Kelly, who had an acoustic neuroma removed in 2005 (www.20six.co.uk/headcase).

My caseload is wide and varied. Common causes of problems include Bell's Palsy, post surgical Facial and Acoustic Neuroma, parotidectomy, temporo-mandibular joint replacement, Ramsey Hunt Syndrome as well as neurological conditions including Guillain Barre Syndrome, sarcoidosis and Moebius Syndrome. There is also application within upper motor neurone and lower motor neurone stroke but frequently in these cases the facial palsy is incomplete and not one of the client's priorities for rehabilitation.

In general, my experience has made me consider my approach to dysarthria management and particularly facial weakness. The face works as a whole, and we tend to think about exercising the weak side to encourage return of function. Instead, I now look at working the face bilaterally, encouraging small, equal movements that the weak side can cope with. This dampens down the good side to allow the weak side to match it and increase the size of the movement while maintaining balance and not encouraging dominance and over-compensation of the unimpaired side.

There is a lot of work ongoing into the use of electromyographic biofeedback in swallowing which is exciting. We are in a good position to move forward with this as we have the equipment in Aberdeen and experience in its application, albeit to date in facial rehabilitation.

Independent practice

Last year I decided to move into the field of independent practice and do this one day a week in addition to my NHS work. The Lindens Clinic asked me to join them and so The Lindens Clinic (Aberdeen) was started as the Scottish Satellite Centre. For the majority of people in Scotland it is easier and more convenient to venture to Aberdeen rather than Manchester.



Top: Penny Gravill
Below:

1. A client 4 months post acoustic neuroma surgery (no treatment)
2. A client 5 months post acoustic neuroma surgery (trophic electrical stimulation begins).
3. A client 18 months post acoustic neuroma removal, with 12 months use of Neuro4. No movement but symmetry at rest is achieved.
4. The Neuro4 trophic electrical stimulator



REFLECTIONS

- DO I LOOK FOR NEW WAYS TO MAKE THE BEST USE OF MY EXPERIENCE AND SKILLS?
- DO I APPRECIATE THE ROLE OF SELF-ESTEEM AND CONFIDENCE IN RECOVERY?
- DO I HAVE COPING STRATEGIES FOR WORKING WITH PEOPLE LONG-TERM?

Working independently is a tremendous challenge but the 6 months it took to set it up has definitely been worth it. I remember feeling totally daunted by the prospect of data protection statements, statements of terms and conditions, BUPA recognition, tax, insurance and public liability to name a few. However, if you are considering it, you are not the first and there is a lot out there to help! People with their own businesses - whether speech and language therapists or those in other areas - are tremendously generous in sharing what they have, from advice to spreadsheets. A course run by the Association of Speech & Language Therapists in Independent Practice gave me very helpful direction and was well worth the expense.

In spite of its frustrations, I get much pleasure from my NHS employment and find the working environment stimulating and challenging (as well as providing boring essentials like a pension!) The friendship and support of colleagues should not be underestimated as working in independent practice is often solitary. We may have many gripes about the NHS but, in spite of all the extras which have crept up over the years, there are systems and administrative support - and these things are tremendously time-consuming when working on your own. I still feel awkward asking for payment but remind myself that for every hour of face-to-face contact there is an awful lot more in paperwork and preparation for that session and the running of the facility.

I have had, and continue to have, tremendous support from the experts at The Lindens. In this fascinating field which bridges traditionally defined medical specialities as well as paediatrics and adult caseloads, I feel that the more I learn I realise how much more there is to learn.

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References

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- Farragher, D.J. (2005) *A Loss of Face. Facial Paralysis – A Guide to Self Help*. 3rd edn. Manchester: Diana Farragher.
- Kingsley, R.E. (2000) *Concise Text of Neuroscience*. 2nd edn. Philadelphia: Lippincott Williams and Wilkins.
- Lindsay K.W., Bone I. & Callander R. (1991) *Neurology and Neurosurgery Illustrated* 2nd edn. London: Churchill Livingstone.

Resources

- The Association of Speech & Language Therapists in Independent Practice, www.helpwithtalking.com
- The British Acoustic Neuroma Association, see www.bana-uk.com