Despite rapid advances during the past two decades there are still unanswered questions

Recent developments in lasers and the treatment of birthmarks

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LEADING ARTICLE

Several other methods of cooling soon became available. These included contact methods in which a cooled surface is placed against the skin during treatment, and non-contact methods in which a cold stream of air is directed at the surface during treatment. At this point, there are no clinical data comparing these methods. Anecdotal reports suggest that all are effective and there does not appear to be any major difference in efficacy.

Lasers and light sources

Pulsed dye lasers are the most widely used. Since their introduction in the late 1980s, numerous modifications have been made; the most recent features incorporated into these lasers include the following:

- Longer wavelengths (585–600 nm). Most physicians treat in the 585–595 nm range. Anecdotal comments suggest that 600 nm appears to be too long and less effective.
- Bigger spot sizes. Most lasers will offer 7 mm and 10 mm options.
- Longer pulsewidths. At this time, there are no clinical data to support longer pulsewidths but anecdotal reports favour a 1500 µs exposure times. Clinical experience with pulsewidths longer than this has not resulted in improved results.
- Surface cooling. Several techniques of cooling are in use. These include cryogen spray, cold air, a cold window, and a cooled sapphire tip. There appear to be advantages and disadvantages of all of these methods but they do not appear to translate into any difference in efficacy. It is, however, most important that we use one of the methods of cooling.

The features mentioned above do appear to improve our results although at this point, good clinical data has not been published. These developments are however, recent, and it is expected that published clinical data will likely follow.

The most recent generation of pulsed dye lasers with all of the above features as well as a pulsewidth in the millisecond domain (up to 50 ms) has become available. There are clear theoretical advantages to the longer millisecond pulsewidth, but whether or not these will translate into better clinical efficacy remains to be seen.

Other devices are also useful. These include KTP lasers and Nd:YAG lasers; more recently a source of non-coherent intense pulsed light has been used with some success.

KTP lasers emit a wavelength of 532 nm (green light) which is as well absorbed by oxyhaemoglobin as light at 585 nm, but unfortunately there is
A clinical approach
Pulsed dye lasers are the most widely used lasers in this field. Their efficacy with grade IV lesions and lesions with cobblestone formation is poor, probably because of the fact that the vessels that make up these lesions have diameters that require millisecond exposure times. Although the addition of surface cooling and higher fluences may well change this, at this point, KTP lasers and intense pulsed light sources are useful for grade IV lesions. In the presence of cobblestone formation, Nd:YAG lasers are useful, but if the cobblestones have been present for several years, surgical excision may be necessary. Surgical correction of soft tissue hypertrophy is occasionally helpful, especially with lip and eyelid hypertrophy. Surgical excision and full thickness skin grafting is, however, no longer warranted and given the success of laser treatment, this should be strongly discouraged.

HEMANGIOMAS
Pulsed dye lasers are essential to treat the superficial component of a hemangioma during both the proliferative phase of development and the phase of involution. During the proliferative phase, it is felt that repetitive treatments administered at 3–4-week intervals may diminish the ultimate size of the lesion, and in some cases, even completely resolve the lesion. Pulsed dye laser treatment has also been advocated for ulcerated lesions. While in most cases this is appropriate, in a very small number of patients, ulceration may in fact worsen after treatment, especially in segmental lesions. Skin resurfacing with both CO2 lasers and Er:YAG lasers is useful for treating the atrophic scarring that so often remains after an ulcerated segmental lesion has involuted. Further to this, the newer “combined” lasers that combine the use of more precise ablation with an Er:YAG laser and the effect of collagen shrinkage from a CO2 laser or a long pulsed Er:YAG laser would be, at least theoretically, better.

PIGMENTED LESIONS
The newer generation of Q-switched lasers can selectively destroy melanosomes and are thus useful for treating benign lesions, such as café au lait macules, lentigines, and nevus of Ota.

Café au lait macules
Unfortunately, early reports of success have been tempered by the fact that many eventually recur after treatment. In a recent study, lesions with an irregular jagged edge had the most favourable response to treatment.

Nevus of Ota
Several reports have confirmed the successful removal of these lesions with both Q-switched ruby lasers and Q-switched alexandrite lasers. Recurrence has not been reported.

REFERENCES
A leap into the unknown—working overseas

Like most of these things, the opportunity to work for a year in Brisbane came about by chance, one in a series, in a lifetime filled with lucky circumstances.

I had already decided, with my wife, to take six months of unpaid leave in order to see a bit of the world. More about this another time. The chance to work in Brisbane came up and we rapidly combined it with our travel plans. It is usually hard for doctors working in a March/September system to fit in with doctors working in a January/January system without upsetting someone. Our plans for time out to travel gave us much needed flexibility to reconcile this.

Part of me would have liked to work in the developing world, but for complicated personal reasons this was not possible. So, the question arises: What is the point of working in another developed country? Will the experience be significantly different from staying at home? To try to address this valid point, I set myself some goals and some questions that I wanted to try to answer by the end of my time in Australia. I've had varying success.

Firstly I wanted to get a feel for which of the problems with NHS are the consequence of it being the NHS, and which are common to any health monolith. Clearly I only have an n of 2, but I do have a better feel for what we do because that is what we've always done, and I've seen some of the problems we share with Australia solved in different ways.

Secondly I was keen to experience some branches of paediatrics my region or country couldn't offer me—or could only offer me with greater commitment than I could give in a five year training programme. Thus, I've had short periods of experience in paediatric intensive care, with fixed wing and helicopter retrieval, in oncology, and in rural and (extremely) remote paediatrics. I've also been the Chief Resident, a role which isn't currently found in any hospital in the UK.

And thirdly I wanted to find out more about some of the specific issues I've written about here—the 40 hour week, obesity, teenage smoking, aboriginal health, and so on.

What are the downsides of working overseas?

Well, there are conflicting messages about the amount of time that will be counted towards your CCST when you spend time out of rotation. At various times I was told anything from one and two years of my total two years working overseas. The postgraduate deans are currently under pressure to move SpRs through the system, and so now there is a trend to include more out of programme time. I'd have to be honest and say that the issue didn't really worry me greatly; so I might be a consultant for a year less in the grand scheme of things—where's the hurry? Oddly enough the Royal Australian College of Physicians allows up to six of the total seven training years spent outside Australia. This causes a little anxiety among some senior members, who argue that this isn't really an Australian training at all. There must be some happy—although entirely arbitrary—middle ground. Unless the supervising body had confused training with service, of course...

It's been expensive too. Oh, I've earned loads, but being on the other side of the world from your usual home gives you a different perspective. It would rude to go all that way and not see the place properly, wouldn't it? It does, however, leave my pension in a terrible mess.

Lastly the stresses involved in dealing with a whole different set of regulating bodies—from immigration, through registration to colleges, and the health monoliths themselves—can be huge. We got married a few months before leaving for Australia, and I can honestly say—with no disrespect to the institution—that the wedding was a breeze compared with the rest of it.

At the end of it all, in answering the question “Was it worth it?” I would have to say yes, emphatically and without hesitation.

A few tips for anyone considering anything similar. Firstly don't underestimate the disruption and cost. Do the old backpackers' technique for estimation of expenses: work out how much you'll need, and then double it. If you are used to backpacking, then double it again. Secondly, establish and use clear lines of communication. Get an account with a telecom company offering cheap phone calls to wherever you are going. Follow up post; send items by international registered mail if they are at all important, and make a polite phone call after two weeks if you've heard nothing. Email can make this easier, but people have varying levels of ability with this tool, and you need to remain contactable.

Lastly, if you think you would like to do it, then you should. I doubt very much you will regret it.

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