

Smart thinking

Professor Paolo Bonan discusses the benefits of CO₂ lasers in the treatment of children with the SmartXide from DEKA, which is distributed in the UK by Lynton Lasers

AESTHETIC MEDICINE: Which paediatric skin conditions can CO₂ lasers successfully treat?

PROFESSOR PAOLO BONAN: Many skin conditions can be treated in the paediatric field and the improvements in CO₂ laser technology by companies such as DEKA have given practitioners the opportunity to achieve safe, efficacious results. When it comes to treating children, the toleration of the various types of treatment depends on the type of procedure, the protocols, and so on. But with CO₂, we can treat warts, viral warts for example, scars and vascular anomalies such as a port-wine stain. This can be treated in combination with other vascular-selective lasers such as the pulsed dye laser.

AM: Could you talk specifically about how you might treat a child's port-wine stain?

PB: We follow specific protocols and employ a pulsed dyed laser in the first instance for three or four sessions, depending

on the thickness of the port-wine stain. We can then use the SmartXide Touch with a surgical handpiece and a 7-inch spot size to vaporise the nodular and hypertrophic areas of the lesion before using the device's fractional modality with the Hi-Scan DOT/RF scanner. Fractional CO₂ allows us to remodel and to complete the procedure in this kind of anomaly.

AM: What are the main benefits of the SmartXide Touch?

PB: The device not only offers a practitioner the ability to achieve results quickly while maintaining the safety profile, but they can also be very selective in the procedure. It's possible, for example, to target a lesion without damaging the apparently healthy skin surrounding it. I would say that the SmartXide Touch is like a gorgeous Ferrari. If you are capable of driving a Ferrari, you will just enjoy your machine; but if you're not, the likelihood is that you will crash. You need the appropriate training to understand the full benefits of the device.

AM: Are there any special considerations a practitioner should take into account when it comes to treating a child?

PB: Yes, and this point is valid whether you are treating children or adults: it is very important to know not just the physics of the laser and the laser tissue interactions, but the entire protocol of treatment needs to be carefully considered, from the preliminary interview with a young patient to post-treatment care.

AM: What treatment parameters would you follow when treating children with darker skin types?

PB: For younger skin, we try to find the best combination of parameters by reducing some parameters and increasing others. However, it is important to recognise that we have to treat children with darker skin types or children of colour differently. There are specific protocols to follow and DEKA offers the possibility of modulating the laser tissue interaction by combining different options and parameters, many of which are unique to the company. So if we modulate carefully and treat over a number of sessions, we can achieve the same results, maintain safety, and mitigate the risk of instances of post-inflammatory hyperpigmentation (PIH) in darker skin types.

AM: Are there any post-procedure complications that need to be taken into consideration?

PB: As mentioned, PIH is a risk factor for some skin types, but this can be mitigated to a certain degree by using an imaging



system that allows you to study the skin before treatment. I personally use a system by QuantifiCare, which complements a clinical assessment by allowing me to analyse the skin and document the depth of the melanin pigment. PIH is quite unpredictable – it is always lurking around the corner – but if you follow the procedure and make a preliminary study, you can reduce the risk.

AM: How useful is fractional CO₂ laser therapy in the treatment of acne scars?

PB: The first point to note is that inflammatory acne scars are completely contraindicated for this kind of treatment. On the contrary, depressed scars, or atrophic acne scars, are perfectly remodelled by the fractional modality, the Hi-Scan Dot/RF. We have studied this a lot – we've published papers on this topic – and have discovered that you can stimulate collagen fibres, creating new collagen fibres that stimulate the process of remodelling the skin. We normally need two months for neocollagenesis, but there are different processes that happen in the skin. Normally new collagen fibres are formed, but even the matrix, the so-called extracellular matrix, is modified, so it's a cascade of events, alongside the release of a lot of substances called cytokines, that can contribute to this important remodelling of the skin.



AM: How would you approach the consultation process when treating a child?

PB: The exact approach to the consultation process depends on the age of child, of course, but my personal approach is to adopt maximum empathy for the patient, especially when it is a young child. I like to involve the children I treat in a bit of fun, exploiting their fascination with the light, and pointing out that the laser resembles something out of *Star Wars*. I find that this is one of the best ways to reduce any tension or anxiety they may have.

AM: What advice do you offer parents regarding post-procedure aftercare? Does this advice for children differ from that given to adults?

PB: The post-treatment procedure is very important and there aren't any differences in the advice given, whether the patient is an adult or a child. It is very important to keep the wound hydrated and protected from the sun, and to apply moisturising cream, antibacterial cream and wet gauzes soaked with thermal water in the immediate days following the procedure. It is simple advice, but I would say it's crucial for getting the best results. Avoiding crusting of the wound is incredibly important. **AM**



>> Professor Paolo Bonan qualified as a physician and surgeon in 1986 before specialising in the fields of dermatology and venereology. He is a member of the European Academy of Dermatology and Venereology, the European Society of Dermatological Research and the Italian Society of Dermatology and Venereology, and is an author and co-author of a number of books and research papers on the topic of light sources in dermatology. Holding professorships at a number of universities in Italy, Professor Bonan heads up the cosmetic, plastic and laser demo surgery unit at the Villa Donatello clinic in Florence. He is a key opinion leader for DEKA, leading the Academy sessions that the company hosts at the clinic.