INTERNATIONAL STEREOTACTIC RADIOSURGERY SOCIETY
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Interview with DR. Federico Colombo

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Prof Colombo, considering your eclectic background I was wondering when and how you became interested in stereotaxy.

My studies on stereotaxy began in 1978. Before that I started out in a rather classic way, I busied myself with functional neurosurgery along with Professor Broggi and other colleagues from Freiburg, like Mundinger, and from Stockholm. In 1981 my studies focused on organic neurosurgery, as I wanted to treat organic lesions, as my colleagues from Freiburg were doing.

What was the turning point?

I recall a congress in Paris back in 1980. A day of the congress was devoted to stereotactic radiation; there were experts from around the globe, like Lekselll and Kjellberg, and his cyclotron, from Boston, Salorio from Spain, who was using the linear particle accelerator, as well as Fabrikant from the University of San Francisco, who was also using another type of cyclotron.

That was a very exciting and interesting day, it was magic.

What were the takeaways of that topical day?

Back home I thought: “Let’s try!”

I wanted to develop stereotactic tools, hence I rolled up my sleeves and in ’81-’82 I studied the Varian 6 MV, focusing on the isocentric movement, I eventually decided to place the target at the center, which allowed for good control, and eventually led to the development of the system for the helmet and to secure the bed.

How did you do that? Did you have any collaborators?

I got a grant and started to search for some collaborators. My father, being a University professor, help me there, he knew where to look for good engineers.

When did your creation become operative?

The first treatment dates back to the late'82, I treated a pineocitoma patient, an elderly woman, followed by a metastasis of renal cell carcinoma and the third one was a recurrent glioma. All three went well. Then, in 1983 we treated a meningioma of the cavernous sinus.

And what about the dose?

Good question. That was rather complex, as they were presented confusingly: in Stockholm the isodose was 50%, ours ranged from 75% to 80%. At the beginning we opted for two hypo fractionated sessions.

When did you start treating AVM (arteriovenous malformation)?

That was at the start of 1984.

Did you do that autonomously?

At first I drew from Sweden, which is from Steiner. Then I embarked on a world tour, so to say, to visit the most prominent RS centers across the globe: I went to Boston, Los Angeles….

At a radio-oncology conference in Santa Margherita Ligure in 1984, Prof Giovanni Broggi was there too, the "multiple isocentric arcs" were presented for the first time ever, I proposed 2000 rads, when Prof Bernasconi. A famous Italian neurologist stood up and said: "Are you crazy!" Yet, as crazy as it might have seemed, it eventually turned out to be the right choice.

Who do you regard as the genius in the field?

The genius is Leksell, in terms of inventiveness; he was the one to come out with novel, ground-breaking ideas.

But going even further back, to the dawn of it all, I'd say Lawrence.

How about Betti?

Betti was clever. Betti and I once unknowingly presented three works on the same subject, simultaneously….But Betti made use of the armchair, which was rather complex. Our method was more manageable, user-friendlier let's say.

And it has paved the way for the technique in use to this very day… What do you reckon could be the future developments in radiosurgery?

The image-assisted technique has opened up new scenarios, the helmet well be no longer needed.

Will the future be multisession therapy?

Definitely, thanks to this technique we will be able to treat bigger volumes, it allows for fractionated treatments, simulations…it is a very versatile technique.

Is the technique ready for other kind of radiation? Like ultrasounds?

There was talk of such possibility many years ago. Leksell tried to use ultrasounds to replace rays, but many holes were needed (I actually saw the pictures). It occurs very often that an idea is conceived long before the necessary tools are available to develop it, hence it is abandoned until the tools are eventually fine-tuned.

Was the path always smooth?

Not at all, there was no shortage of hitches all along the way…I was called names the world over (laughter)! But my colleagues really believed in what I did. You know that doctors can be rather conservative and skeptical, but I always enjoyed their support and trust, they sent me their patients and I really appreciated it.