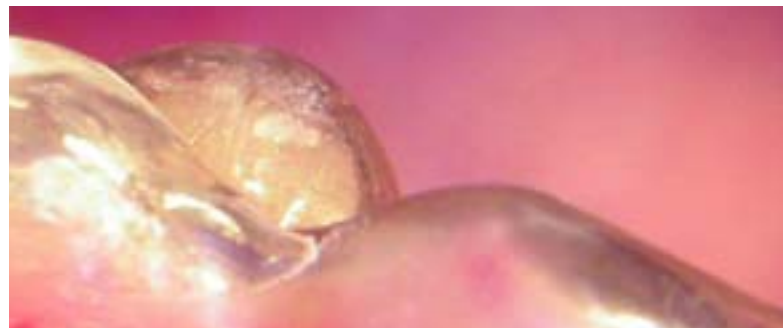


TOPIC

Balloon-Assisted Sinusfloor Elevation – an Alternative to Open Sinus Elevation?



»EDI News: Fears Concerning the Directive on Services · Comment on the Directive on Services · EU Service Directive – BDIZ EDI to Organize European Consensus Conference · Dental Implantology – Questions and Answers: Italy · BDIZ EDI Family Growing to Include Serbia-Montenegro, Portugal and Spain · UOI-SCG EDI: Founded in Serbia-Montenegro in December · »European Law: The Dutch Way – An Example for Other Reformers to Follow? »Case Studies: Balloon Lift Control Bone Management System · Augmentation and Defect Reconstruction with a New Synthetic Pure-Phase Beta-Tricalcium Phosphate · Full-Mouth Restoration, Part 2



CAD/CAM in Restorative Dentistry – Innovative or Not?

If we take a moment of retrospection, following the astounding technological developments during the 20th century and up to our days, and if we then try to see a glimpse of the future, we will realize that all innovations in the fabrication of dental restorations were intended to achieve one or more of three essential goals: quality, ergonomics and economy.

Quality is the achievement of reproducibly high standards. Quality is measured according to pre-established, controllable criteria, laid out to protect the user of the final product.

Ergonomics is the optimization (in space and time) of the working environment in terms of security and consistency, including a rational study of fabrication times.

Economy is an improvement in the cost/benefit ratio, including biological savings.

Consistently applying all three goals to surgical and other medical procedures improves patient safety and allows more conservative diagnostic and therapeutic procedures. Procedures could be accelerated while also creating savings in terms of money and resources.

Technological innovations previously established in non-medical fields have often been applied to dentistry with excellent results. CAD/CAM is a prime example. CAD/CAM creates three-dimensional objects, starting out from a drawing processed on a computer platform and transforms them into prototypes using additive (stereolithography – 3-D layering – or laser forming) or subtractive (CAM milling) techniques, an automated mechanical process also known as “rapid prototyping”.

For about two decades now, CAD/CAM has been used industrially for pre-production prototyping. Such prototypes are tested prior to actual production. Since the early 1990s, CAD/CAM has also been used in dentistry, initially for indirect restorations and later also in dental implantology. If its clinical application can now be considered routine, this is owed not so much to improvements in the manufacturing (CAM) aspect but rather to two factors related to design (CAD) – the evolu-

tion of the software and the creation of a virtual environment that increasingly meets the needs of clinical procedure and case management.

Not least thanks to CAD/CAM, new biologically inert (titanium) and aesthetic (disilicates, alumina, zirconia) materials have been introduced – a truly innovative approach specific to dental applications. The essence of innovation, however, is not in the procedure itself but rather in the option to integrate it with the traditional fabrication sequence, improving the results in terms of ergonomics and quality along the way.

Working with software constitutes a revolution in our clinical practice and greatly enhances our treatment options, with manual skills being de-emphasized in favour of project management skills. Contrary to popular prejudice, this approach allows us to improve quality in terms of precision control and procedural flexibility. Working with CAD/CAM systems, then, does not mean standardized products and inferior quality; rather, it means obtaining high-precision prototypes on terms of individual and biomimetic design. Our new possibilities, inherited from the technological evolution in the virtual sphere, now lets us design dental implants based on scanned intraoral images. These scans give us three-dimensional casts so realistic that they can be used as master casts for the fabrication of manually produced restorations, both provisional and definitive, that can be inserted immediately after implant placement. These restorations, too, are developed on CAD/CAM systems, without the use of conventional modelling or casting procedure.

It is certainly possible to catch a glimpse of the near future and what expects us there: computer-assisted surgery (CAS) and flapless surgery will become part of our routine therapeutic armamentarium, supported by highly individual manually produced restorations of excellent quality.

Sincerely,
Guido Schioli, Genoa/Italy
MD, DDS

Interview with Dr Schirolì, Genoa/Italy



Dental Implantology – Questions and Answers: Italy

In our series about dental implantology in Europe our interview guest in this issue has been Dr Guido Schirolì, General Secretary of the CAI Academy (Computer Aided Implantology Academy) and lecturer for the master-course in implantology at the University “La Sapienza” in Rome. Dr Schirolì is specialised in Odontostomatology and runs his own dental office in the city of Genoa.

How interested in dental implants are patients in your country? Are they well informed about innovative techniques and treatment options?

Since the time of their introduction to Italy some years ago innovative implant techniques have now become widely known by our patients who often come to our offices asking specifically for replacement of a tooth by means of osteo-integrated implants. Despite the fact that they do not exactly know the percentage of failures/successes of such treatments, they are still afraid of the so-called “rejection” and even less do they know about the most recent innovations regarding the technologies of biomaterials and the elevation of the sinus for instance. Furthermore, information is sketchy and at times it is at risk to become hazardously “disinformation”, for example in relation to the immediate load where the patient imagines that this can be carried out in all cases.

How interested in dental implants are dentists in your country? How do dentists view dental implantology – as a welcome challenge or as undesirable competition to traditional prosthodontics?

In Italy starting from the second half of the eighties the use of implant techniques and the scientific and clinical success of osteo-integration in general have given such an exponential thrust to the growth of the use of this technique that today about 50 percent of dental offices routinely apply these procedures. At first the process was slower due to the need to check the scientific basis and the replicability of the success of osteo-integration; after the spreading of the use of implantology it was also aided by the fact that in Italy a dentist is generic and therefore also a prosthodontist; it thus came to be used in the treatment plans firstly for completely edentulous patients and then even for more complex cases.

VIEW

What type of education or postgraduate training does a dentist (or physician) need in your country to be able to work in dental implantology?

No particular training is necessary from a purely institutional point of view. Naturally, all practitioners have learnt the rudiments through the workshops of different companies and have refreshed by following national or international courses and congresses.

What is the total number of dentists in your country?

There are approximately 35,000 dentists in Italy.

What percentage of these, according to your estimate, are active in the field of dental implantology?

Still today only 50 percent of dentists carry out implantology and only 50 percent of the population goes to the dentist.

Is being an active dental implantologist an attractive proposition in your country? If so, why?

Yes it is, because implantology is today the therapeutic means by which to carry out 80 percent of prosthetic cases and because nowadays in the replacement of a single tooth for instance, the patient often refuses conventional prosthetic treatment(s).

Are there any specific requirements for dentists offering in-office implantological services?

From the training point of view there is no institutional obligation but from the legal one it is necessary to integrate the insurance for physical harm in the sense of the widening to that deriving from implant surgery.

Who pays for implantological treatment, and how? What are the respective shares of patients, statutory or private health insurance plans, and/or other institutions and organizations? Is dental implantology a prerogative of wealthy patients, or are there ways to provide treatment for patients with limited financial means?

In almost all cases the patient pays personally for the implant treatment; institutions cover only reconstructive treatment after accidents at work/road accidents or after post-oncological surgery reconstruction. For executives some companies and multinationals cover according to internal price lists which make up about 70 percent of the expenses normally sustained for the usual treatments. Therefore, the lowest income categories cannot have access to implant treatments.

What would be the cost of replacing a missing single anterior tooth using a dental implant and crown superstructure? Please state an average and estimated ranges.

It would cost about 3,000 EUR.

What is your estimate of the average percentage of laboratory costs of the overall cost of a prosthodontic treatment?

The Percentage of dental office management costs 15 percent and the percentage of prosthodontic treatment costs 50 to 90 percent depending on the practice and specialization of the dentist.

Is there a legal framework designed specifically for dental implantology?

Yes, there is one, but just for insurance cover. A national protocol issued by a kind of dental society is not available.

What are the problems implantologists are facing in your country? Are there different types of expert training? Are there special degrees or certificates awarded following successful completion of specialized curricula?

There are different kinds of clinical practical or theoretical (basic/advanced) courses. The Italian National Health Institution recently created a programme of continuing education in all (medical) specialities: It is necessary to earn 50 points in five years. Each course receives some credits from the Institution depending on the items and the practical part of it.

How do you believe dental implantology in your country will develop – as the ideal solution in prosthodontics or as one concept of many?

I think dental implantology will develop in Italy as the ideal prosthodontic solution.

Given developments on a European level, what chances and what threats do implantologists in your country anticipate for their own future?

In my opinion the chances are, to improve case acceptance and to create new business opportunities. The threat that I see is the levelling off towards the low level of the dental services due to lowering of quality and standardization.

Please name three topics that you would like the BDIZ EDI – European Association of Dental Implantologists to prioritize in their work.

The first topic is the field of European continuing education. We need clinical session courses involving the new member states of the European Union. The second one is that we should establish official proto-

cols. And as third point we have to create a European specialization for implantology recognized both at the European and international level.

What are your wishes for dental implantologists in your country?

In brief these are:

- Improvement of the information about the patient.
- Institutional recognition of the quality of professional dental offices, for instance, quality awards according to specific criteria.

In your opinion, how important is linking the science of dental implantology with topics of practical relevance such as billing, liability, or office management?

Implantology is a highly specialized subject which needs great professional skills in order to give clinical benefits and profits and not lead to conditions of liability with regard to the patient. Therefore, qualitative choices even in terms of management consequently impose high costs both to the end-user and to the dentist. Hence in order to be able to manage the implant-prosthetic activity in a fluid and generous way it is necessary to have a scientific preparation and ergonomic/managerial mindset that is just as skilful.

Supplementary questions related to the work of BDIZ EDI:

What would be the importance and the mission of a European journal in the field of dental implantology?

It would offer a European point of view.

On which topics would you appreciate a panel discussion or international symposium?

Interesting topics could be:

- New Technologies: prototyping/CAD CAM..
- Safe surgery: flapless.
- Immediate function: benefits and protocols. ■

**Many thanks for answering the questions,
Dr Schirolli**