

Irrio.

The Bleu Blanc Dent company was created in early 2019 to contribute to the sector of continued training in odontology. Since its launch, many of you, practitioners and the industry, have supported us, so we wish to thank you for it.



Dr. Bertrand Baumann

The last two years have been busy, what with the launch of our website, the development of online continued training sessions, scientific articles and the organization of events in Alsace.

Today's health issues in the context of Covid-19 compel each of us to remain watchful in our professional practice and thus take part in the collective national effort.

Our team is as determined as ever and our goal to provide continued training to our colleagues must adapt to the new health imperatives. That's why we are delighted to propose the first Bleu Blanc Dent journal on the topic of implant surgery and immediate fixed temporary aesthetic prostheses.

Doctor Baumann and his team wish you a good read.

**Dr Bertrand BAUMANN.**  
**The Bleu Blanc Dent team.**

## Clinical work performed by Dr Bertrand BAUMANN

### Exercise in implantology and pre-implant surgery, Soultz (Haut-Rhin), France

#### Exercise in implantology at the Albert Schweitzer Hospital, Colmar, France

Today's world urges us to go faster and faster as if time were our enemy but the healing process of our tissues must run its course, at its own pace, regardless of our need to hurry. Implant surgery and our patients' aesthetic demands are no exception to that rule.

We are going to find out how we can provide care to our patients while respecting recent scientific developments. We will base those findings on various clinical situations

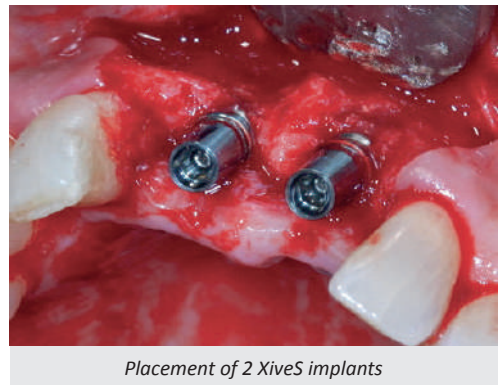
and we will back them up through exchanges between practitioners and prosthesisists.

The immediate fixing of a temporary aesthetic prosthesis corresponds, clinically speaking, to fitting a prosthetic supra structure on non-osseointegrated implants, within 7 days of placement. It is imperative to meet the requirements of the healing process necessary to osseointegration to ensure therapeutic success. The patient's choice is key to a successful treatment.

## Clinical situation N°1 : replacement of two central maxillary incisors

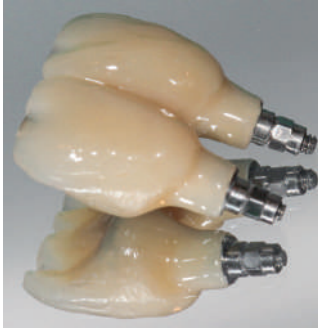


This 64 year-old patient, afflicted with hypothyroidism, was referred by her treating dentist after losing teeth 11 and 21 in a context of localized aggressive periodontitis.

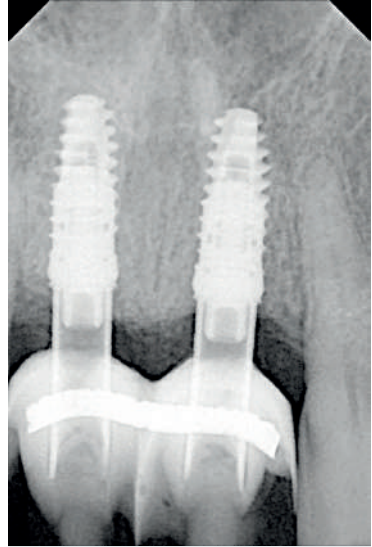


The **optimal positioning of the implants** is the first criterion of success of an immediate fixing of a temporary aesthetic prosthesis. Each surgical step must respect and preserve the nearby periodontium, both for the bone tissues and the mucosal tissues.

For this patient, we used a guided bone regeneration technique through Bio Oss and an Ossix Plus resorbable membrane so as to bolster the peri-implant mucosal tissues.



*Realization of temporary screw-retained prostheses*

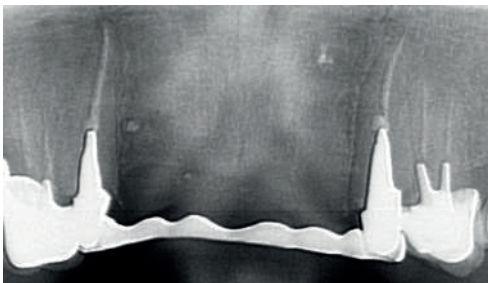


*X-ray after loading*

The prosthesis must be planned in collaboration with the prosthodontist. **The implant supra structure must be perfectly passive** and the finishing work on the resin

beyond reproach. On the occlusal level, when one is faced with a whole sector of missing teeth as in our case, it is advised to **place the restorations out of occlusion**.

## Clinical situation N° 2 : replacement of 4 maxillary incisors



*Initial X-ray situation*

This 56 year-old patient, without previous medical condition, was referred by her treating dentist for an implant rehabilitation of the maxillary incisor region.

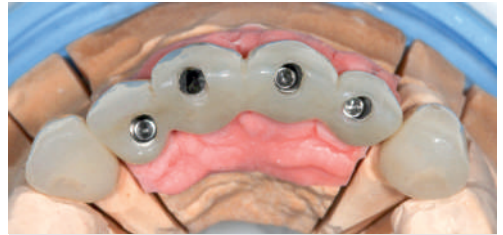
**Validating the prosthetic planning** in a clinical situation before surgery allows to better plan our implant operation. It is preferable **to use a surgical guide** to accurately position each implant.



*Immediate post-op clinical situation :  
placement of 4 XiveS implants*

For this patient, a guided bone regeneration was realized with Bio Oss and a resorbable Ossix membrane during the fitting of the 4 implants. As a result, the peri-implant mucosal tissues benefit from a better and lasting support and dimensional stability on the bone level.

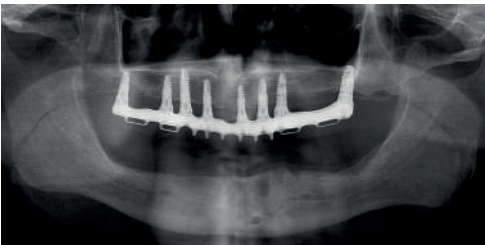
Once **implant positioning respects the prosthetic planning** validated beforehand with the prosthesis, the temporary screw-retained prosthesis can be made respecting the criteria necessary to good healing of the periodontium during the whole period of osseointegration.



*Realization of the screw-retained temporary prosthesis*

The integration of the restoration must **respect the periodontium** and **allow proximal hygiene several times a day**.

## Clinical situation N°3 : complete rehabilitation of edentulous mandible in a favorable situation

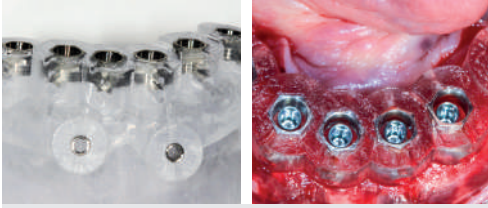


*Initial X-ray situation*

This 76 year-old patient, without previous medical condition, wanted a supra implant prosthetic rehabilitation fixed to the mandible.

The occlusal context of our patient, a very energetic person by the way, with powerful masseters, compelled us to be particularly watchful in our clinical choices during the immediate fixing of a temporary aesthetic prosthesis. For that reason we decided to position 6 implants in the maxillary arch.

## IMPLANT SURGERY AND IMMEDIATE FIXING OF A TEMPORARY AESTHETIC PROSTHESIS



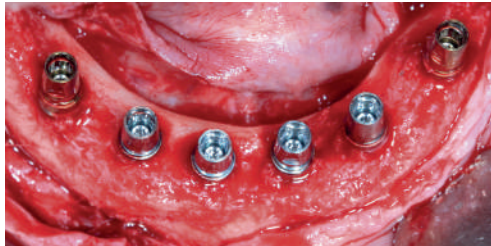
*Realization of a screw-retained bone-supported Simplant Safe surgical guide.  
Fitting of 6 XiveS implants.*

The preservation of the attached tissue is one of the factors of success of implant therapy; the keratinized tissues must be evenly incised from the start. The positioning of multiple simple stitches at the end of surgery will allow to support the periodontium during the healing phase.

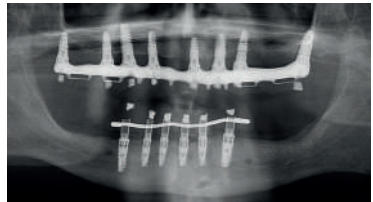


*Realization of temporary screw-retained prosthesis*

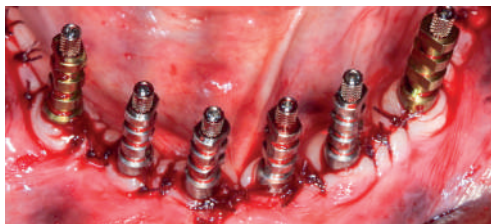
The realization of a bone-supported screw-retained surgical guide (Simplant planning and Simplant Safe guide) allowed us to **optimize the implant positioning and to better take advantage of the available bone volumes** between the two chin foramen. The guide was used throughout the surgery, from the initial drilling to the insertion of the 6 XiveS implants.



*Initial clinical situation during the fitting of the implants*



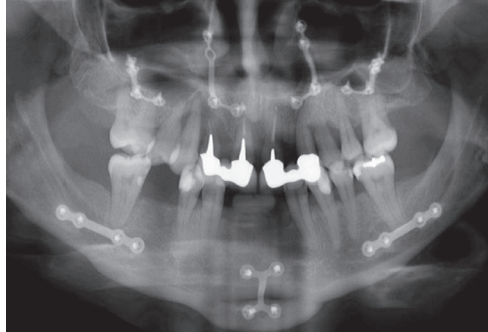
*X-ray and clinical situation during the immediate fixing of the temporary aesthetic prosthesis after 4 days.*



*Positioning of transfers for open tray impression*

The absence of residual teeth deprived the patient of the sense proprioception and put us under stringent occlusal constraints. A fine adjustment was made to allow a balanced bilateral occlusion with group function in propulsion movements as well as left and right lateral movements.

## Clinical situation N°4 : complete rehabilitation of a toothless maxillary and a partially edentulous mandible in unfavorable bone atrophy

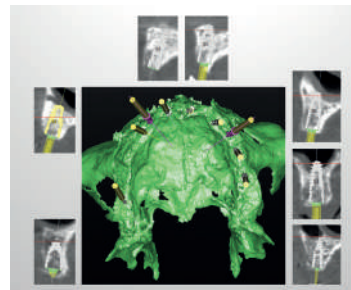


*Initial X-ray situation*

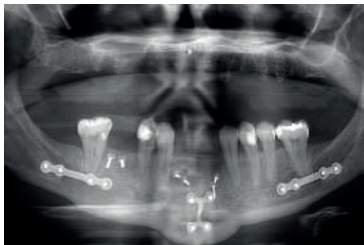
This 45 year-old patient, without previous medical condition, had benefited from a bimaxillary orthognathic surgery associated with genioplasty. She was referred to us by her treating dentist for a bimaxillary global implant rehabilitation in a context of a generalized periodontal disease on both arches and in the end stage on the maxillary.

The first intervention consisted in pulling all teeth on the maxillary arch while preserving as much attached tissue as possible, removing

the maxillary bone plates, and realizing an allogenic bone graft in the symphyseal region and on site 46.



*Surgical planning on Simplant*

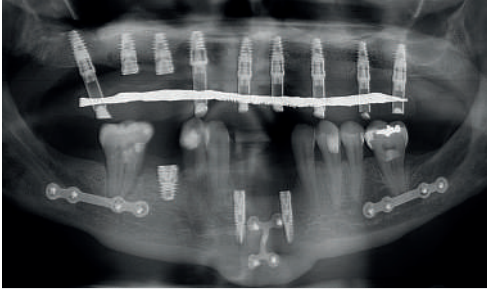


*Control X-ray after 6 months*

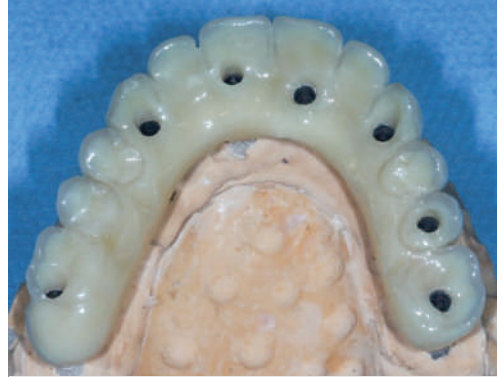
**Implant surgery planning** is the key step in such a complex clinical situation. The placement of two implants in 14 and 15 was performed freehand because it was associated with a sinus lift by lateral approach (with Bio Oss) in a context of orthognathic surgery.



Prior to that, a horizontal osteotomy of both maxillary sinuses was performed by a maxillofacial surgeon which had a deep impact on the surgical approach.



*Post-op X-ray during fixing of the temporary aesthetic prosthesis after 4 days.*



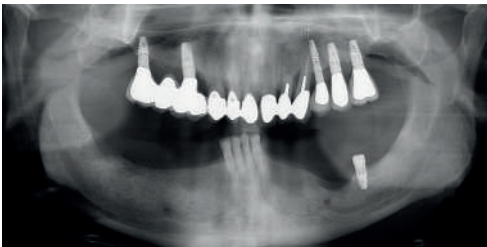
*Realization of temporary screw-retained prosthesis*

The peri-implant soft tissue management had to be realized in a second phase because of drastic mucosal changes linked to the multiple previous surgeries. On the mandible, loading was postponed because the implants were placed in grafted sites. The mandibular implants as well as implants in positions 14 and 15 were then loaded once they were osseointegrated since they were positioned on grafted sites.



*Clinical situation : control after 3 months*

## Clinical situation N°5 : complete rehabilitation of a partially edentulous mandible in an unfavorable prosthetic situation



*Initial X-ray and clinical situation*

This 81 year-old patient, with arrhythmia was referred to us by his treating dentist for a full arch implant rehabilitation on the mandible.



*Realization of an X-ray guide consistent with the clinically validated surgical guide.*



*Realization of a two-level screw-retained temporary prosthesis*

In view of the patient's age and his determination to go ahead with this, we performed under general anesthetic a mandibular extraction, bone remodeling of the symphysis, the fitting of 6 implants and immediate fixing of the temporary aesthetic prosthesis.

It was crucial **to realize a surgical guide** validated beforehand in the mouth to better organize the various steps of implant surgery.



*Post-op X-ray during fixing of the temporary aesthetic prosthesis after 4 days.*



*Realization of a two-level screw-retained temporary prosthesis*

In this complex clinical situation, careful **thought must be given from the start to the prosthesis and implant process** so as to anticipate difficulties..

Fine occlusal equilibration after the placement of the temporary mandibular prosthesis is essential to secure a lasting result and allow for a good osseointegration of the implants.

The occlusal situation of the patient led to considerable prosthetic height which compelled us to make a **two-level temporary screw-retained prosthesis**. A screw-retained cast strand was made first to offset the excessive prosthetic height and function as a prosthesis support. A conventional temporary prosthesis was then screw-retained on the strand to finalize the fixing of the temporary aesthetic prosthesis.

## C o n c l u s i o n

The immediate fixing of a temporary aesthetic prosthesis in implant surgery must be thought through well before surgery. It is essential to plan ahead the future prosthetic concepts so that implantology benefits the prosthesis and not the contrary.

Several points need to be factored in :

- The primary stability of the implants: it is a precondition that at least 30 Ncm torque should be applied (5)
- The temporary prosthesis must be fashioned in one piece and made more rigid with metallic backing or a metallic framework (1)
- Most studies estimate that 6 is the minimum number of implants required in the case of a completely toothless maxillary arch (1)
- The implants should be distributed as homogeneously as possible (2)
- The most distal implants may be slanted if necessary, with identical implant survival rates (6)
- There is no significant difference for the implanted site between a healed bone and an extraction socket (3)
- The occlusal equilibration during the aesthetic fixing of the prosthesis must be meticulous
- There is no consensus on the type of prosthesis (screw-retained, sealed or both). However most surgeons use a screw-retained prosthesis which makes reoperation easier (2)

The logo for Irrio, featuring the word "Irrio" in a bold, sans-serif font. The letter "i" is red, while the other letters are blue.

1° Atia J, Derman D  
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2° Bergkvist G, Nilner K, Sahilholm S, Karlsson U, Lindh C  
*Immediate loading of implants in the edentulous maxilla : use of an interim fixed prosthesis followed by a permanent fixed prosthesis : a 32-month prospective radiological and clinical study.*  
*Clin Implant Dent Relat Res* 2009 ; 11(1) :1-10

3° Crespi R, Capparè, Gherlone E, Romanos GE  
*Immediate occlusal loading of implants placed in fresh sockets after tooth extraction.*  
*Int J Oral Maxillofac Implants* 2007 ; 22 (6) :955-962

4° Esposito M et al.  
*Interventions for replacing missing teeth : different times for loading implants.*  
*Cochrane Database Syst Rev* 2013 ; (3) : CD003878

5° Pappaspyridakos P, Chen Cj, Chuang SK, Weber HP.  
*Implant loading protocols for edentulous patients with fixed prostheses : a systematic review and meta-analysis.*  
*Int J Oral Maxillofac Implants* 2014 ; 29(Suppl) : 256-270

6° Tealdo T et al  
*Immediate versus delayed loading of dental implants in edentulous maxillae : a 36-month prospective study.*  
*Int J Prosthodont* 2011 ; 24(4) :294-302

W e t h a n k o u r p a r t n e r s



MATÉRIEL ET FOURNITURES DENTAIRES



Fondation  
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Diaconat  
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*Considérer avant tout le mieux être de la personne*

Etablissement privé à but non lucratif reconnu d'utilité publique depuis 1865

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