IMPLANTS:

OPTIMIZING OUTCOMES

Everyone in the dental industry knows that the field of implantology is expanding exponentially. Scores of people are looking for permanent, esthetic restorative options, and today's patients are much more informed and savvy than their predecessors. They are aware of dental implants, and have researched what makes implant treatment successful. However, even with an understanding of dental implants, what many patients do not realize is how much teamwork and communication goes into a successful implant case. The restorative dentist works closely with specialists, such as periodontists, oral surgeons, and orthodontists, as well as the dental laboratory and their own in-office team, to ensure that implant treatment is successful. Communication and teamwork is key in optimizing implant treatment outcomes, and it is essential that each member of the dental team is familiar with the entire implant process to best serve each other, and the patient.

By Kate Hughes

More Information, Less Complications

Implant treatment can begin in either the restorative dentist's or a specialist's office, and during the initial planning stages, these clinicians must take note of the patient's health, their functional needs, and their esthetic desires. This information is not just for the benefit of the restorative dentist, but the entire dental team. Donald Clem, DDS, a periodontist and implant specialist, says that that it is imperative that everyone on the dental team is on the same page when beginning implant treatment. "If everyone is aware of all of the aspects of the case, we can balance the patient's needs and wants with what can be realistically achieved," he says. Having all of the information regarding an implant case makes it much easier for everyone to work toward a common goal while knowing the limitations of the case, and can reduce the risk of complications. Clem says that if the entire team is informed, the patient is much more likely to receive implants that will demonstrate a high success rate in the long term. "Only when each opportunity and risk is evaluated and planned for, can we seamlessly move through our treatment algorithms," he explains.

Using Every Player on the Team

Every member of the dental team plays an integral part of implant treatment. It is the cohesive work of the restorative dentist, specialist, lab technician, and hygienist or assistant that optimizes the outcome of an implant case. If one of these pieces is missing, the chances that something could slip through the cracks greatly increases.

THE RESTORATIVE DENTIST

The restorative dentist is the point person when planning an implant case, as he or she is the person who coordinates the entire procedure with the patient and other members of the dental team. According to Robert A. Levine, DDS, a periodontist and Director of the Pennsylvania Center for Dental Implants and Periodontics, understanding implant procedures as a whole is very important for the restorative dentist, because it is his or her job to communicate the steps of the procedure to the patient, as well as what will be necessary to the rest of the dental team. "Knowledge of everything from bone grafting to the esthetic limitations of different implant abutments as well as when a case can be cemented or screw-retained should be part of the restorative dentist's arsenal," Levine explains. "If the restorative dentist is aware of all of these factors, it allows the rest of the dental team to enter the procedure knowing of any limitations and being prepared to take on any challenges."

The restorative dentist must also have knowledge of these steps because it is up to him or her to communicate them to the patient who is undergoing the implant procedure. "The restorative dentist should be able to inform the patient which procedures may be necessary at the time or prior to placing an implant," Levine stresses. "The more knowledge about the procedures and the value of the 'team approach' that is conveyed, the more confidence, comfort level, and treatment acceptance will be instilled in the patient."

THE SPECIALISTS

In implant treatment, it is often up to a periodontist, oral surgeon, or endodontist to do the actual implant placement, and they rely heavily on the general/restorative dentist to provide them with all of the information they need to place the implant correctly. Clem says that the restorative dentist and the periodontist or surgeon should collaborate on detailed written treatment planning reports to confirm the chosen treatment options. This not only ensures that the restorative dentist and the specialist are on the same page, but it also makes it easier for this information to be disseminated amongst the other members of the team.

The team should share diagnostic information with each other. Elizabeth Bakeman, DDS, a restorative dentist, says that imaging technology is a particularly valuable tool when planning implant placement. "The three-dimensional imaging done through CBCT scanning provides enlightening information. This information creates improved understanding of the underlying osseous architecture and its relationship to important structures such as nerves, blood vessels, sinus spaces, and adjacent teeth well before we make the first incision. The information we gain allows us to better and more confidently plan treatment and minimize surprises on the day of the surgery," she says.

It is important for the restorative dentist to establish a complete diagnosis and develop a comprehensive treatment plan that considers all of the patient's risk factors and needs. Implants should not be approached in isolation but in conjunction with a long-term plan for optimizing oral health.

For example, once an implant is placed, the location is fixed. Therefore, before implant placement, it must first be determined if the vertical and horizontal position of the teeth are in the desired location. If significant alterations are needed to create the desired result, implant placement is best postponed until these changes are made, typically through orthodontic movement.

Likewise, the health and long-term prognosis of the adjacent teeth must be considered. Two implants can support multiple-tooth restorations. Depending on the design of the prosthesis, a full arch of teeth can be retained and supported by four to six implants placed in optimal positions. For a debilitated dentition, this type of long-term planning is extremely important to avoid wasted time, energy, and money for the patient. "Patients are best able to make decisions that serve long-term goals when they are fully informed. It is the dental team's responsibility to make sure there is complete understanding of oral health as a whole before proceeding with treatment," Bakeman says.

THE LABORATORY TECHNICIAN

Michael Sesemann, DDS, a restorative dentist, believes that members of the dental team have a synergistic relationship, and there is no better dentistry than the dentistry that results from the shared intellect of the entire team. "There are all sorts of factors that have to be taken into account in an implant case, especially when you start considering your options at the dental laboratory," explains Sesemann. The restorative dentist has a myriad of options that require decisions be made before the laboratory can begin fabricating an implant and an abutment. "The complexities

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of implant-supported options, considering whether to use metal, PFM, or an all-ceramic implant, is something that should be discussed between the restorative dentist and the laboratory technician," Sesemann says.

Laboratory technicians have a unique viewpoint, and look at implant procedures within an entirely different context. "When I'm planning implant treatment, I'm considering things like how the abutment will fit, how it will coexist with the surrounding biological structures, and how it will function. The laboratory technician is considering how the abutment can be fabricated to maximize strength while mimicking the esthetics of the patient's dentition. The combination of our perspectives helps us to cover all of our bases," Sesemann explains.

The involvement of the laboratory technician in implant procedures need not end at the fabrication stages. Some clinicians and specialists will even ask their laboratory technician to come to their office the day of the implant surgery, further ensuring that any issues that arise can be dealt with swiftly and in the moment.

THE DENTAL HYGIENIST AND DENTAL ASSISTANT

Planning implant cases is a complicated endeavor with many moving parts, and communicating all of these pieces to an anxious patient can sometimes present difficulties. Incorporating the interpersonal skills of the dental hygienist or dental assistant into implant treatment planning is just as crucial as incorporating the lab technician or the specialist. According to Clem, these members of the dental team can act as a therapeutic consultant for the patient's dental needs. "They provide emotional support, function as a sounding board, and give the patient the confidence to move forward," he says.

Beyond the emotional support the hygienist and the assistant give to the patient, these members of the dental team are instrumental in teaching the patient the at-home maintenance skills specific to their individual implant restoration. The hygienist should also be actively monitoring the patient's oral health, as well as looking for conditions such as peri-implant mucositis or peri-implantitis. "The hygienist is a particularly essential team member in implant treatment and maintenance," Clem says. "They should be playing an active role in advising patients, maintaining their health, and detecting potentially destructive changes in dental implants."

THE PATIENT

The patient may be the central focus of implant planning, but it can be easy to forget that informing the patient of the different aspects of the procedure can be just as important as informing the dental team. "Managing patient expectations is a huge piece of implant treatment planning," says Bakeman. "Because we are able to tell ahead of time any limitations that we may have, we need to be certain that we are communicating those limitations to the patient, as well as to the other members of the dental team." The patient's presenting anatomy may restrict the type of implant that can be placed, or could present esthetic challenges. Or, there might not be enough bone mass to place an implant without doing a graft first. The patient must know all of these steps before treatment begins, so he or she is not blindsided by "extra" procedures in the chair. "It really is all about communication. We are

able to show the patient where the edge of the implant-supported tooth will be, what shape the tooth will have, and if there will be any gaps between the implant and the patient's natural dentition. We want the patient going into the procedure fully informed so there are no surprises after we have finished," Bakeman says.

Levine puts extra care in ensuring that the patient is involved in the implant planning process. "After a treatment plan is determined, my implant team schedules the patient for a visit to review everything, no matter how long it takes. The patient is shown his/her clinical pictures and CAT scans, the total plan and procedures are discussed and explained, all fees (surgical and restorative) are itemized with all presented in writing," Levine says, explaining that this transparent approach to implant treatment allows the dental team to exceed the patient's expectations and keeps patients happy. In addition, having the patient informed regarding the implant procedure allows him or her to see how cohesively the dental team works together. "The patient notices how fluid the teamwork is," Levine says. "And they notice how seamless their experience is when everyone is working together."

Finding Common Ground

Communication between all members of the dental team is paramount to a successful implant outcome; however, getting everyone on the same page can often take a bit of extra work and education. "The various members of the dental team may come to the table with strong knowledge in one aspect of the procedure and that level of expertise is why they are valuable to the team. However, in order to have the best possible outcome in an implant case, everyone must have an understanding of the procedure as a whole," Bakeman explains. "For example, it is helpful for the surgeon to have knowledge of the prosthetic limitations of a type, size, and position of an implant so that he or she doesn't unwittingly create challenges for the restorative dentist later on in the procedure. An orthodontist involved in creating adequate space for implant placement needs to be aware of root angulations so that adequate room is not only created coronally but also at the apical limits needed for proper implant placement."

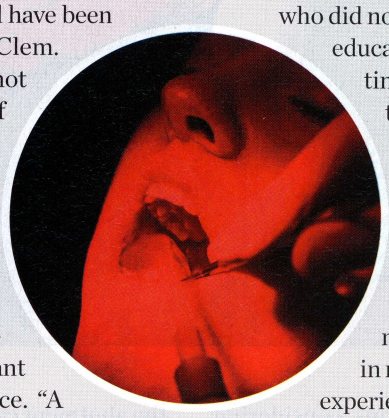
There are multiple variables that influence outcomes and different members of the team control these variables at different times in the procedure.

According to Bakeman, having an overarching understanding of the entire process is invaluable, and every member of the dental team should be invested in broadening their scope of knowledge. "Communication is easier when everyone has a grasp on the limitations as well as the expectations of the other members of the team, and they can more effectively work together to solve any issues that may arise. Making sure that everyone on the dental team has knowledge of all involved disciplines, not just their own area of expertise, is absolutely key to optimizing outcomes."

There are courses where the dental team can study together with the big picture in mind. For example, the Kois Center in Seattle,

Using Teamwork to Manage Implant Failure

While many dental teams are able to place implants predictably and without incident, there are cases where something does go wrong. Failed implants are often the result of clinicians who perform the procedure without the proper training and resources. These clinicians fail to consult with other members of the dental team, and take too much responsibility on themselves. This leaves them prone to make mistakes because they do not have the other members of the dental team to help catch anything that might slip through the cracks. "Many of the complications that I see could have been avoided," says Donald Clem. "These poor outcomes not only affect the success of the patient being treated, but also the practice and profession as a whole. Poor planning produces poor outcomes."



Clem has more strong advice for restorative dentists who want to do implant dentistry in their practice. "A poor outcome in implant dentistry can do more to destroy the reputation of a practice than almost any other failure I can think of," he warns. "Patients with complications will discourage other patients from considering these potentially valuable solutions. If I were a patient, I would want to know that my surgeon was actually a trained surgeon and my restorative dentist was actually a trained and experienced master at his craft. Somehow that message has been corrupted and, as a result, the public—and to a certain extent—the profession is confused. There is an old saying in implant dentistry: 'Implants are simple—until they're not.' The best opportunity for success and practice growth is to establish a close and mutually supportive working relationship with specialist colleagues who can help you succeed in every case you take on."

The cases that Clem, and other clinicians who try to correct implant failures, takes on usually have one thing in common: The implant was placed by someone who did not have the experience or education necessary for an optimal result. Using the entire dental team to help manage patients who are experiencing implant failure helps to put the patient at ease, because they now are getting all of the information and know they are in many pairs of skilled and experienced hands. "You should never sugarcoat any difficulties with patients. They need and deserve frankness while being diplomatic, non-judgmental, and realistic in what can be accomplished surgically," Clem says. "The surgical and restorative team needs to be mutually supportive of each other and sensitive to the emotional fallout that frequently accompanies these situations. This helps to ensure that they get the best possible outcome, even after a difficult experience."

Washington, offers courses that cater to the entire dental team—restorative dentists, surgeons, and dental technicians. "When we have the opportunity to learn side-by-side we develop a multidisciplinary understanding that serves to move the involved parties in the same direction," Bakeman says. "Communication is more streamlined and there is less opportunity for miscommunication when every member has a multidisciplinary scope of knowledge."

Courses for the entire dental team are not the only way for the group to become well versed in implant planning procedures. Levine is the founder of has been the director of the Northeast Philadelphia Dental Implant and Perio-Prosthesis Study Club since 1984 and is also the program director of the International Team for Implantology (ITI) Tri-State Implant Study Club. It is at these clubs that Levine, a periodontist, can touch base with his restorative dentists and discuss new research and procedures in a relaxed, open forum, enabling all to learn these new options together. "The internationally renowned clinicians that are invited to speak at our study clubs reinforce the 'team approach' and the idea of becoming familiar with the entire implant procedure. We talk about the different implants and prosthetic parts we use, the type of support we get, and basically go from 'A to Z' so the entire team feels comfortable with the approach," Levine explains. "This understanding of implant therapy and how it is delivered by an interdisciplinary team can result in predictable outcomes beneficial not only for the patients, but also for each interdisciplinary team member who participates in delivering that outcome."

Getting in Touch, Staying In Touch

Ideally, the entire dental team should be able to get together and discuss their implant cases in-person. However, scheduling conflicts and geographic restrictions can make in-person meetings difficult to nearly impossible. As such, technology like e-mail, video chat, and digital photography are all integral tools to the dental team when working on an implant case. "The audio/visual and Internet capabilities we now have at our disposal have certainly made communication easier between members of the dental team, especially when we cannot see each other in person," Sesemann says. He specifically brings up the fact that advances in digital videography allow the restorative dentist to show the patient's anatomy to other members of the team in real-time, which allows them to make treatment planning decisions together while the patient is in the office, even if everyone else is not.

Doing What's Best for the Patient—Together

In order to optimize the results of dental implant cases, the restorative dentist requires the cooperation and efforts of the whole dental team. Working together not only gives the team members the opportunity to collaborate on different treatment options and the work itself, but gives everyone a bigger thought pool to draw from, and facilitates the team's ability to come up with the best solution for the patient, every time. The patient, in turn, receives not only excellent treatment, but is included in a collaborative group and is reassured by how cohesively the team works together. Because they are educated by other members of the team, working as a unit also allows everyone on the dental team to stay up-to-date and informed regarding new technology and procedures. This sort of teamwork will only gain in popularity as more and more clinicians realize that through tapping the expertise of their peers, they can perform their best dentistry to date.

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