Conical internal connections will fuel growth in dental implant market

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The dental implant and bone graft substitute market is the most rapidly advancing segment of dental growth. Conventional competitors in this market must consistently develop new products supported by a host of scientific and academic organisations to remain competitive. Recent cases have demonstrated that when companies lose a segment of support from the scientific community, their market shares tend to suffer significantly.

The European dental implant and bone graft substitute market has been further challenged by recent economic instability and the eurzone crisis, which has created a consistent demand for lower-cost dental implant products. As a result, many lower-priced competitors have begun to seize larger market shares in almost every European market. In many segments, these competitors are either regional or sourced from overseas markets such as Brazil, Korea and Israel. Regenerative products and barrier membranes have been particularly affected by consumer austerity, as these products are discretionary in many cases. However, a growing number of consumers continue to demand high-quality products, guarantees of service and scientific improvements, which only premium manufacturers are equipped to offer. Conical internal connections are one such recent innovation, and currently constitute the fastest-growing connection type in the dental implant industry.

Many dental implant and bone graft substitute companies have looked to expand their product portfolio or create new markets while they create package deals to offset competition from rapidly emerging lower-priced competitors. Significantly, many European and US companies involved in this market have begun to invest in rapidly emerging peripheral markets such as Turkey.

Increasing prevalence of conical internal connections

Dental implants are connected to final abutments in one of three ways: internal connections, external connections or single-unit devices in which the implant and abutment are already attached. Moreover, internal connections have two sub-segments: butt-joint internal connections and conical internal connections.

Research has shown that a lack of intimate fit of the implant in the abutment or movement of the implant can provide an area for bacterial growth. Conventional butt-joint connections provide a connection that can result in micro movimiento between the implant and the abutment, creating a pump effect for bacteria into the connection area. When bacteria are present in the micro-gap, they can cause inflammation, tissue recession and bone loss. Recent clinical studies have demonstrated that, on average, conical connections offer a smaller microgap than butt-joint connections, in addition to a greater mechanical level of stability. As a result, conical connection types have become hugely successful in the dental implant market, and the majority of leading dental implant manufacturers have introduced conical internal connection products. Conical connection types will continue to represent one of the fastest-growing segments of the dental implant market.

Turkey one of the fastest growing dental implant and final abutment markets in the world

Turkey is one of the fastest-growing dental implant markets, with strong economic growth that weathered the recession far better than the US and nearly any region in Europe. The technology of dental implants in this country has advanced rapidly, as most of the major players in the European market moved quickly to gain a strong market share in Turkey. Additionally, this market benefits from low labour costs, which adds to the incentive for implant companies to establish domestic subsidiaries or local distribution partners, fuelling options for consumers. Turkey is also a popular destination for dental tourism, especially among patients from more expensive European markets. From 2008 to 2016, the Turkish dental implant, final abutment and computer guided surgery market is expected to grow to a compound annual growth rate of 20.4%. In May 2011, AGS Medicali Grünerti, the first major Turkish company to produce dental implants, commenced operations in the Turkish dental implant market.

The dental implant and bone graft substitute market in the UK has advanced rapidly, this country has advanced rapidly, and the market has begun to invest in rapidly emerging peripheral markets such as Turkey.

Quality of medical services they offer.

The UK features one of the highest rates of outbound dental tourism, as patients are unaccustomed to the costs of treatments for procedures, owing to the legacy of the National Health Service. Whereas rich patients from developing countries used to come to prestigious hospitals in the UK and elsewhere for treatment, outbound medical travel from the UK has been growing far faster than inbound over the past decade, as UK patients are increasingly traveling abroad for lower-cost care. Figures suggest more than 50,000 citizens of the UK go abroad for treatment annually. The number of outbound medical tourists from the UK rose by 170% from 2002 to 2009.

Dental implant companies follow success of conical internal connection

Butt-joint connection types as a whole are becoming increasingly dominant in the dental implant market. Conical internal connections and butt-joint internal connections represented 83.4% of implants with an internal connection in 2011. Conical internal connections are the fastest-growing segment of the market and expected to increase at a compound annual growth rate of 10.1% by 2018. Noble Active (Nobel Biocare) was one of the first companies to introduce conical connection types, and was rapidly adopted by consumers owing to clinical results demonstrating improved sound and smaller micro-gap between implant and abutment. The majority of large companies now offer a conical connection, as this market is expected to overshadow butt-joint internal connections. This will ultimately lead to the greater stability and perceived smaller diameter micro-gap offered by conical connection types. Many companies are combining these connection types with tapered shape and surface treatments as the current generation of premium products.

The information contained in this article was taken from two detailed and comprehensive reports published by iData Research (www.idatareresearch.net), entitled “European Markets for Dental Implants, Final Abutments and Computer Guided Surgery” and “European Markets for Dental Bone Graft Substitutes, Dental Membranes and Tissue Engineering”. iData Research is an international market research and consulting firm focused on providing market intelligence for the medical device, dental and pharmaceutical industries. For more information and a free synopsis of the above report, please contact iData Research at dental@idatareresearch.net.
Titanium implants may carry risk of corrosion

Titanium medical implants used in dental prostheses and bone-anchored hearing aids may be less robust than commonly believed. Researchers from the UK have recently discovered evidence to suggest that in some circumstances where there is no significant wear process, microscopic particles of titanium can be found in the surrounding tissue, which may have a negative impact on the devices.

For the study, Dr Owen Addison in the Biomaterials unit of the University of Birmingham’s School of Dentistry and his team obtained tissue from patients undergoing scheduled revision surgery associated with bone-anchored hearing aids (BAHA) at University Hospitals Birmingham NHS Foundation Trust. Soft tissue surrounding commercially pure titanium anchorage devices was examined using micro-focus synchrotron X-ray scattering at the Diamond Light Source, Oxford, UK.

“The results showed, for the first time, a scattered and heterogeneous distribution of titanium in inflamed tissue taken from around failing skin-penetrating titanium implants,” the authors reported. “Wear processes and implant debris were unlikely to be major contributors to the problem. In the absence of obvious macroscopic wear or loading processes, we propose that the titanium in the tissue results from micro-motions and localized corrosion in surface crevices.”

Globally, more than 1,000 tonnes of titanium are implanted into patients in the form of biomedical devices every year. Metallic prostheses, fixation and anchoring devices are used extensively for dental, orthopaedic, and craniofacial rehabilitation and their effects on the body are widely perceived to be following initial implantation.

The development of peri-implant inflammation may result in the premature loss of the implanted device or the requirement for revision/revision surgery, which are scenarios that can ‘impact on patients’ well being and economically on the health service providers,’ the authors concluded in the study.

“Our results emphasise the need to understand further both the physical and chemical mechanisms leading to the dispersal of titanium species in tissue around implants and their potential to exacerbate inflammation.”

“Similar processes are likely to contribute to the failure of other metal implants in soft tissues, where macroscopic wear is not considered to be a risk,” they said.

Addison commented that while the findings pose no alarm to those with BAHA implants or similar devices, they demonstrate that improvements in materials like titanium can be sought. Research is currently being conducted to look at the biological consequences and to understand the mechanisms by which the debris is produced.

The study “Do passive medical titanium surfaces deteriorate in service in the absence of wear?” was published online on 25 July in the Journal of the Royal Society Interface ahead of print.

International implantology experts gathered in London

In September, the International Team for Implantology (ITI), a worldwide independent academic association in the field of implant dentistry, held its annual general meeting in London. Around 160 participants attended the event, during which its next president was elected and the association’s honorary fellowship was awarded.

In addressing guests, the association’s president, Prof. Daniel Buser, pointed out the ITI’s growth in recent years owing to the success of the ITI Study Club concept in particular, which was introduced in 2010. He announced that the ITI had welcomed its 10,000th member in 2011 and now has more than 12,800 members worldwide.

In addition, David L. Cochran, professor at and Chairman of the Department of Periodontics at the University of Texas Health Science Center at San Antonio’s Dental School, was elected as Buser’s successor, for the first time, four years term of office as president will end in April 2013. According to the organisation, Cochran has been a member of the ITI since 1992. In his position as Chair of the ITI Research Committee and member of the board, he has been actively involved in shaping its development.

Moreover, the association awarded former ITI president Prof. Dieter Weingart an honorary fellowship for outstanding merit and his commitment to the organisation. During his presidency between 2005 and 2009, the German professor played an important role in developing and implementing strategic goals of the organisation as defined in the “ITI Vision 2017”, according to the association.

For the first time, the annual scientific seminar held alongside the general meeting was open to both ITI members and non-members. Under the theme “Dilemmas in implant dentistry”, internationally renowned experts reported on challenges in implant dentistry and presented the latest evidence-based findings in the field during the one full day.

The association announced that its next meeting will be held on 27 April 2013 in Bern, Switzerland.

Market report forecasts extensive growth of Korean implants in Asia Pacific

Dental implants produced in the Republic of Korea have gained significant market share in recent years. A report by the Millennium Research Group (MRG) in Canada has predicted that manufacturers from that country could dominate dental implant markets in the Asia Pacific region as early as 2016 owing to their price advantage.

Implants from Korea are also catching up in terms of clinical data, the report states, a fact that will make them increasingly adaptable for implant specialists in the region.

The total regional market for dental implants is expected to exceed US$800 million by 2016 with the key driving market being Australia, which was historically underdeveloped and is now expected to grow by 10 per cent annually, according to MRG.

Japan, the largest national market in the region, will experience slower revenues despite an overall rise in implant procedures.

Alongside Germany and Israel, South Korea currently has one of the highest rates of dental implants per capita worldwide. This market saturation has recently forced many manufacturers to pursue sales markets overseas. While exports to Western countries have remained relatively slow, Korean manufacturers already rival established implant providers in Asian countries like Pakistan, Malaysia or Hong Kong.

The CAMLOG Foundation is calling for research award entries

The CAMLOG Foundation is calling for submissions for its third CAMLOG Foundation Research Award. The award is presented biennially at the International CAMLOG Congress and is open to all talented scientists/researchers and dedicated professionals at universities, hospitals and practices under 40 years of age.

The CAMLOG Foundation engages in targeted support of gifted young scientists, promotion of basic and applied research, and continuing training and education to promote progress in implant dentistry and related fields to better serve the patient.

The submissions must have been published in an accredited scientific journal and can be submitted in either English or German. The articles must deal with one of the following topics in implant dentistry or a related discipline: diagnostics and planning; hard- and soft-tissue management; sustainability of implant-supported prosthetics; physiological and pathophysiological aspects; anatomy, and advances in digital procedures.

The contributions will be evaluated by the CAMLOG Foundation Board. The winner of the 2012/ 2013 CAMLOG Foundation Research Award will be given the opportunity to present his/her work to a wider audience during the 2014 International CAMLOG Congress. Furthermore, the authors of the three best contributions will receive cash prizes (€10,000, €6,000 and €4,000, respectively).

The entry conditions and the mandatory registration form can be downloaded from www.camlog-foundation.org/awards. The registration deadline is 30 November 2013.