A NEW IMPLANT DESIGN FOR ENHANCED STABILITY IN EXTRACTION SITES

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As patients identify the dentist as the one who extracts teeth, its time to identify ourselves as the ones who replace teeth immediately or at least who fill the socket immediately. The answer comes to us in the form of a winged/ringed Dental Implant called Saturn by Cortex Dental Industries, Shlomi, Israel. Developed by Dr. Zvilaster DMD, Dr. Meir Meriev DMD, LLB, Prof. Haim Abramovich B.Sc, M.Sc, Ph.D and their team.

The new implant design, the Saturn dental implant, employs a unique new strategy; that of extended sub-crestal threads, expanded outward in a wing-like effect to engage socket walls mid-crestally for added primary stability.

The implant is a grade 5 titanium conical screw with an internal hex, suitable for immediate function. Two 2.4mm spiral channels with a thickened reverse buttress thread extends around the implant for vertical and horizontal bone compaction. Anti-rotational resistance is built into the thread design, with a small platform switch for biological width. The tapered form with deep threads is particularly well suited for maxillary bone and immediate function.

As immediate loading protocols are becoming more common among dental practitioners. The most important factor for obtaining good results is achieving initial stability. [2-5]

The degree of primary stability achieved during immediate loading protocols is dependent on factors such as shape and size of socket including presence or absence of socket walls, which in turn may be dependent on extraction method. Use of piezoelectric devices such as Piezotome cube (ACTEON) helps preserve bone to a high degree. Further degree of primary stability of an immediate implant placement situation is dependent on implant design, implant shape, implant surface characteristics, bone density and quality and of course, the soft tissue healing. Additionally, techniques such as PRF are of help in early

FIG 1: The new implant specially designed with expanded diameter midcrestal “wing” thread, which might provide added bone contact for greater insertion torque for primary stability[1]

FIG 2: Before
This is the X-ray of a 65 year old female who required extraction of her Tooth # 26. None of her socket was in a favourable anatomical position for placing an immediate implant. The interradicular septum was the best option.

FIG 3: Immediately post implant

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A study conducted by Lydia N. Melek et al. concluded that the piezotome was a more efficient choice for preservation of marginal bone in endodontically failed teeth indicated for extractions compared to the periotome. [6]

Immediate provisionalization should only be advocated with early loading if an initial appropriate initial insertion torque has been approved. [7]

Figure 4: After implant – Note: IntraLift can be facilitated with Piezotome Cube (ACTEON)

Figure 5: Angulated position X-ray can cause misinterpretation

Figure 6: Healing after one week

Figure 7: Healing after one month

Figure 8: Another patient 57 year old male whose premolar was extracted and Cortex Saturn was placed.

Figure 9: The Saturn implant by Cortex in premium set comes with the abutment which was torque tightened as the implant was placed and very conservatively raised and then sutured. The abutment need not be removed for making crown. A very high primary stability is achieved with this implant design.

About the AUTHOR

Dr. Mahesh Chauhan is a Gold Medalist Graduate from MAIDS, Delhi University, 1990. In 1995 he was an Adjunct Assistant Professor at The Ohio State University College of Dentistry, Columbus, Ohio, USA. He lectures extensively at the national and international level on Oral Implantology, Restorative and Aesthetic Dentistry. He maintains a private practice in New Delhi.