

First Look:

The Hahn™ Tapered Implant System



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Advancements in implant design have made the process of restoring normal dental function for edentulous patients more predictable and routine. The Hahn™ Tapered Implant System, which combines time-tested features with cutting-edge innovations, has been carefully designed to satisfy the needs of modern implant dentistry. Tailored to perform in even the most demanding clinical situations, the system offers a simple, efficient solution for every indication, including fresh extraction sites.

Hahn Tapered Implants are engineered to allow precise control of angulation and positioning during placement. The implants seat quickly, with pronounced threads that engage firmly in the direction they're guided and maximize bone contact. The buttress thread pattern of the implant provides good initial stability and minimizes resorption in all bone types, while its coronal microthreads aid in the preservation of crestal bone. The surface of the implant is treated with resorbable blast media to promote osseointegration.^{1,2} The implant's machined collar facilitates soft-tissue

maintenance, while its conical, internal hex connection provides a secure, stable prosthetic seal. Furthermore, the simplified surgical protocol for Hahn Tapered Implants is streamlined with length-specific drills to precisely control the diameter and depth of the osteotomy.

Although Hahn Tapered Implants are well-suited for a wide range of clinical applications, the four cases that follow demonstrate the predictability with which they can be placed in immediate extraction sites and tight anterior spaces.

Case #1

A 72-year-old male with no medical complications presented to the office for treatment. His existing maxillary right central incisor crown was fabricated less than a year prior to his visit. The natural tooth abutment had fractured under the crown. Another dentist suggested extraction followed by fabrication of a conventional three-unit bridge for teeth #7-9, but the patient did not find that acceptable and requested information on additional treatment options for replacing the tooth. After our discussion, the patient decided to have the tooth replaced with an implant restoration.



Figure 1: The digital periapical radiograph shows radiolucency around the apex of the maxillary right central incisor. The tooth was symptomatic, and any pressure placed on it caused discomfort.



Figure 2: Although other issues are evident in this photo, the patient simply wanted an extraction to eliminate discomfort and the tooth to be replaced.



Figure 3: The coronal portion of the tooth was removed with finger pressure, revealing the significant vertical fracture.



Figures 4a, 4b: Physics® Forceps (Golden Dental Solutions Inc.; Roseville, Mich.) were used to atraumatically remove the remaining root structure. Due to an infection at the site of the vertical fracture, the facial plate was compromised and needed to be repaired.



Figure 5: Because of the loss of some of the facial plate of bone, an envelope flap was made that exposed the facial defect and eliminated the need for vertical excisions in the esthetic zone.



Figures 6a-6c: The 2.2-mm-diameter pilot drill was used to create the initial osteotomy approximately 3 mm palatal to the facial aspect of the adjacent teeth, which kept the bur stable in the bone. Correct mesial-distal spacing was verified intraorally using a periodontal probe, and proper depth was confirmed radiographically.



Figures 7a, 7b: The 3.5-mm-diameter and 4.3-mm-diameter burs were used to create the final osteotomy for the 4.3 mm x 13 mm Hahn Tapered Implant.



Figures 8a, 8b: The Hahn Tapered Implant was threaded into the osteotomy site and exhibited outstanding initial stability.



Figure 9: A cover screw was inserted into the implant. NOTE: The beveled surface of the implant was positioned slightly subcrestal on the palatal aspect.



Figure 10: DirectGen™ Allograft cortico-cancellous material (Implant Direct; Thousand Oaks, Calif.) was situated on the facial aspect of the defect. An Epi-Guide® resorbable membrane (Curasan Inc.; Research Triangle Park, N.C.) was passively placed, and VICRYL® sutures (Ethicon; Somerville, N.J.) were used to close the flap.



Figures 11a, 11b: Periapical radiograph of the implant and CBCT scan taken using the PaX-i3D imaging system (VATECH America Inc; Fort Lee, N.J.) illustrate facial bone repair and nice implant position in preparation for a single implant-retained crown for tooth #8.

Hahn Tapered Implants are engineered to allow precise control of angulation and positioning during placement. The implants seat quickly, with pronounced threads that engage firmly in the direction they're guided and maximize bone contact.

Case #2

A 46-year-old female with low blood pressure presented with a grossly decayed maxillary left lateral incisor that was previously reconstructed. No other contraindications to dental implant therapy were noted. Conventional dental therapy was discussed, including fabrication of a bridge. The patient opted for extraction of the non-restorable tooth and placement of a single dental implant and crown.



Figures 1a-1c: The patient presented with a fractured and decayed maxillary left lateral incisor.



Figure 2: The tooth was atraumatically removed while maintaining the facial plate and interseptal bone. Our goal was to control the interdental papillae with proper placement of the dental implant in a physiologically sound position.



Figures 3a, 3b: The 2.2 mm pilot drill was used to angle the initial osteotomy and determine the proper depth for the dental implant.



Figure 4: The osteotomy bur was used to prepare the socket to accept a 3.5 mm x 13 mm Hahn Tapered Implant. The bur facilitated easy determination of proper length and position in relation to the crest of bone.



Figures 5a, 5b: The Hahn Tapered Implant was threaded into the prepared socket site and exhibited favorable initial stability.

Case #3

A 61-year-old male with a non-restorable maxillary right central incisor presented for treatment. Although the patient suffered from controlled hypertension, no other contraindications to implant therapy were noted. Following tooth extraction, a resorbable membrane and grafting material

were utilized to treat bone loss. An implant was placed, and a removable appliance was used to sculpt the soft tissue during osseointegration of the implant. After a four-month healing period, final impressions would be taken for the planned custom abutment and crown.



Figure 6: The implant was ideally positioned about 1 mm subcrestal.



Figure 7: Sufficient initial stability was achieved for an open-tray impression to be made at the time of surgery. The impression was used to fabricate a custom temporary abutment and transitional crown that would be placed to follow a restorative-driven protocol and contour the soft tissue for an esthetic final restoration.



Figure 8: Radiograph illustrates optimal positioning of the dental implant, which would be allowed to integrate for four months.



Figures 1a-1d: The patient presented with a mobile, symptomatic, non-restorable maxillary right central incisor.



Figures 2a, 2b: The tooth was atraumatically removed using Physics Forceps. The facial plate, interseptal bone, and interdental papillae were maintained.



Figure 3: A conservative envelope flap was raised, exposing the contours of the facial bone. No vertical incisions were necessary.



Figure 4: The 2.2-mm-diameter pilot drill was used to create an implant osteotomy at the correct angle, mesial-distal position, and depth for a 4.3 mm x 11.5 mm Hahn Tapered Implant.



Figures 5a-5c: Subsequent burs corresponding to the Hahn Tapered Implant System were used to create the final osteotomy for the implant.

The Hahn Tapered Implant was threaded into position and exhibited excellent initial stability once fully seated.



Figures 6a, 6b: To correct for the slight bone loss at the facial crest, a resorbable membrane and allograft material were placed at the surgical site.



Figures 7a, 7b: The Hahn Tapered Implant was threaded into position and exhibited excellent initial stability once fully seated.



Figures 8a, 8b: A cover screw was placed, and the implant was left to heal in a traditional two-stage protocol for approximately four months.



Figures 9a, 9b: A removable transitional appliance would help sculpt the tissue contours and maintain the interdental papillae during healing.

Case #4

A 42-year-old female presented with no negative medical conditions. Because she was pleased with implant treatment she had received for another tooth in the past, she requested a single dental implant to replace a fractured maxillary central incisor.

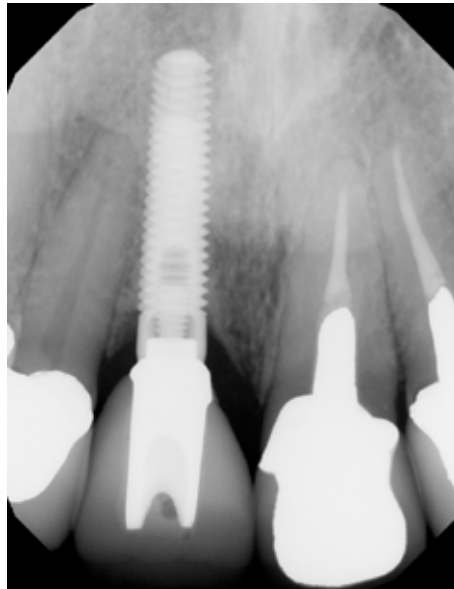
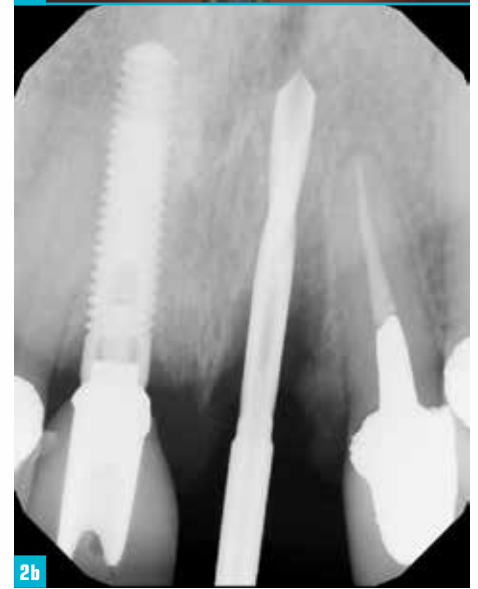


Figure 1: The patient presented with a fractured maxillary left central incisor that was non-restorable and required extraction.



Figures 2a, 2b: A 2.2-mm-diameter pilot drill established proper angulation and depth following the atraumatic extraction of the non-restorable root.



Figures 3a, 3b: A 4.3 mm x 13 mm Hahn Tapered Implant was placed in the socket site and threaded into position until seated.



Figures 4a, 4b: A flat cover screw was threaded into place, and the implant was allowed to integrate for four months.



Figure 5: After just one week, the soft tissue showed excellent signs of healing and interdental papillae formation.

Conclusion

With advanced implant designs, dentists are able to perform implant treatment with a smoother workflow. In addition to providing excellent immediate stability, innovations like the Hahn Tapered Implant are making it easier for providers to replace missing teeth and improve the quality of life for their patients. Hahn Tapered Implants engage a maximum amount of bone and afford the clinician a high degree of control during placement. They are well-suited for a variety of indications, including immediate extraction cases in the esthetic zone. IM

REFERENCES

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2. Nishimoto SK, Nishimoto M, Park SW, Lee KM, Kim HS, Koh JT, Ong JL, Liu Y, Yang Y. The effect of titanium surface roughening on protein absorption, cell attachment, and cell spreading. *Int J Oral Maxillofac Implants.* 2008 Jul-Aug;23(4):675-80.

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