A graftless socket-shield technique for immediate implant placement in the esthetic zone

Udatta Kher1; Ali Tunkiwala2; Siddarth Shanbag3
1India; 2Smiles by Design, India; 3University of Bergen, Norway

Background: The socket-shield technique offers a promising approach for minimizing buccal bone resorption during immediate implant placement by preserving the buccal root segment of the extracted tooth. Conventional approaches involve grafting the space between the root segment (shield) and implant with bone substitute materials.

Aim/Hypothesis: The aim of this study was to evaluate the clinical and radiographic outcomes of a modified socket-shield approach without the use of bone grafts during immediate implant placement in the esthetic zone after 1 year or longer.

Material and Methods: Seventeen consecutive patients (8 females, mean age 54.78 years) presenting with endodontically compromised teeth in the esthetic zone received immediate implants (n = 21) via the socket-shield approach. The surgical procedure involved preserving 1.5 mm of the buccal root segment during tooth extraction, followed by flapless implant insertion with either submerged healing (n = 13) or an immediate provisional restoration (n = 8). The dimensions of the gap between the shield and implant were recorded. After the healing period of approximately 3 months, all implants were restored with either screw- or cement-retained prostheses. Patients were followed-up for >12 months+ peri-apical and or cone-beam radiographs were recorded immediately after implant insertion and at subsequent follow-ups. Clinical parameters including complications such as shield exposures, implant survival at the longest follow-up and pink esthetic scores (PES) were recorded.

Results: Socket-shield preservation and implant insertion without bone grafting was successfully performed in all patients, in all sites. The average gap between the shield and implant, depending on socket implant diameter and implant inclination, was 1.2 mm. After an average follow-up period of 19.71 months (range 12–42 months) no implant failures were recorded (100% survival). Early shield exposure was recorded at 3 implant sites in 3 different patients (17.64%), however, this did not adversely affect clinical outcomes. Midfacial recession was observed at one implant site. No infections were recorded at any of the implant sites. Radiographically, stable marginal bone levels were observed around the implants. An average PES was 12 was recorded.

Conclusions and Clinical Implications: Based on preliminary observations in a limited sample of patients, the socket shield technique without the use of bone grafts appears to yield successful clinical and esthetic outcomes. Avoiding the use of bone grafts could increase the cost-effectiveness of this treatment approach.