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CASE REPORT:
DENTAL IMPLANTS IN EXTRACTION SOCKETS AND PERIODONTALLY
INVOLVED BONE AREAS: THE TECHNOLOGY OF THE STRATEGIC IMPLANT®
RADICALLY CHANGES TREATMENT POSSIBILITIES
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Dental implants in extraction sockets and periodontally involved bone areas: The Technology of the Strategic Implant® radically changes treatment possibilities

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Abstract

If the Technology of the Strategic Implant® is applied, bone augmentations and healing times are not part of the treatment plan for implants any more. As this article shows, bone augmentations, sinus lifts, waiting time are not necessary for dental implant treatment and delivering fixed teeth as long as cortically anchored implant designs with polished endosseous surfaces are used. Periodontally involved soft tissues are not an obstacle in immediate implant treatment with Strategic Implant®.

Introduction

In the field of conventional dental implantology, the treatment of periodontal infections must be done before conventional dental implants can be placed. This leads to the paradox situation that either periodontal treatment must be done before implant placement, or all teeth must be removed considerably earlier before implant placement and an intermediate prosthesis is then delivered. This prolongs the overall treatment time and increases the costs. Both circumstances reduce the chance that the patient will opt for implants.

Recent studies have shown that the Technology of the Strategic Implant® not only does not lead to "periimplantitis", but is also allows a fast approach in periodontally involved cases^{1,2}: Teeth and periodontally involved parts of the gums are removed immediately before implants are placed, and subsequently an immediate load-

ing protocol is carried through.

In this article we would like to show the possibilities of the Technology of the Strategic Implant® and the differences between conventional dental implant on three clinical cases.

Case Studies

Case 1

A 54 year old male patient, smoker, requested an overall treatment of his jaw condition. The treatment provider recommended the removal of all teeth due to their periodontal involvement, mobilities, recurrent infections and reduced lifespan, Fig.1. We informed the patient also that repairs on various single teeth will not improve the masticatory possibilities at all.

At the same appointment when all teeth were extracted, all implants were placed (ten cortically anchored implants in the upper jaw and eight cortically anchored implants in the lower jaw). Uneventful healing is seen on the panoramic picture which was taken during 3-month-control, as well as during 7-years-control, Fig. 2 and 3.



Fig. 1 Pre-operative panoramic picture showing generalized periodontal disease and bone loss at all teeth and deep endo-perio lesions at a number of teeth.

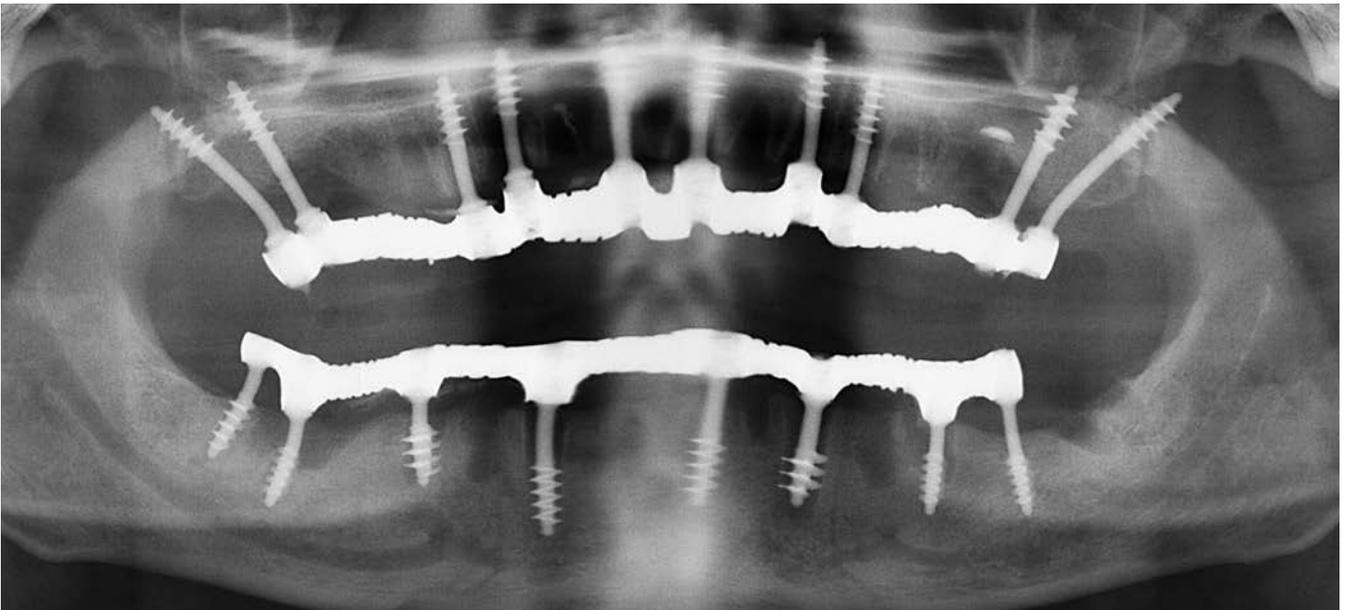


Fig. 2 The 3-month post-operative panoramic picture shows that all teeth were extracted and some of the implants were placed in the extraction sockets (e.g. in area 47, 25, u.a.) and others in healed bone areas.

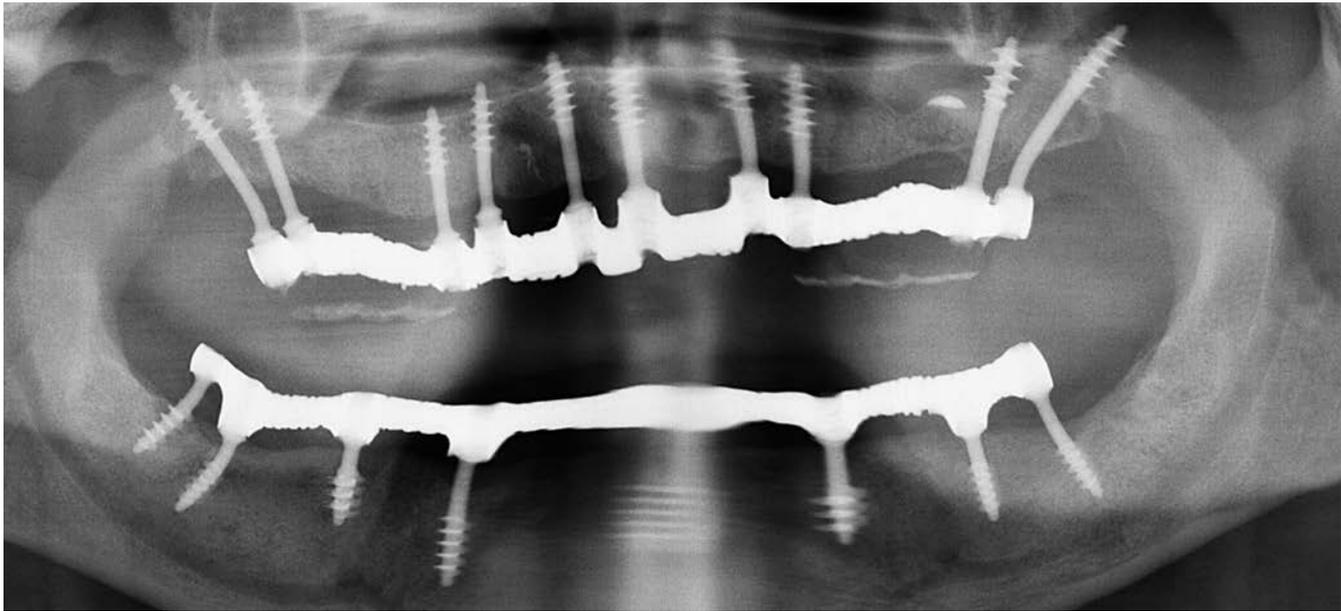


Fig. 3 The 7-year post-operative panoramic picture shows uneventful healing, absence of infections, formation of a continuous bone line, no crater-like bone-loss, and that all pre-existing bone craters have re-filled independently from the implant placement. The implant 47 which was placed deep into a periodontally involved site (into the 2nd cortical^{III}) is now surrounded by healthy bone.

Case 2

A 53 year old male patient, smoker requested the restauration of both jaws with bridges on implants in an immediate loading procedure. The pre-operative picture (Fig. 4) revealed deep pockets, elongations and generalized bone loss. All teeth were extracted and replaced by implants, using the technology of the Strategic Implant®, Fig. 5.

Three months later during the 2nd clinical and radiological control the bone sites appeared to heal uneventfully (Figs. 6 and 7). For better visibility the figures show only details on the areas described here.



Fig. 4 Section of the pre-operative panoramic pictures showing left lower jaw of the patient. 34 and 36 is missing, 35 had moved distally. 37 shows profound periodontal involvement on the distal root. 33 shows a large translucency in the area of the root, resembling a peri-apical infection.

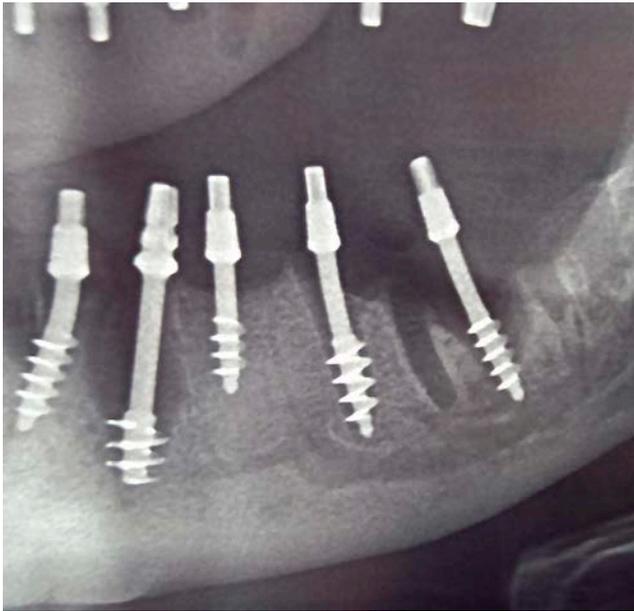


Fig. 5 Postoperative section of the panoramic picture, showing the lower left mandible. One Strategic Implant[®] has been placed into the deepest section of the periodontal defect of the distal root of tooth 37. No implant was placed in area 38. A wide diameter implant (BCS 4.6 23) had been placed partly apically to the peri-apical infection of tooth 33.

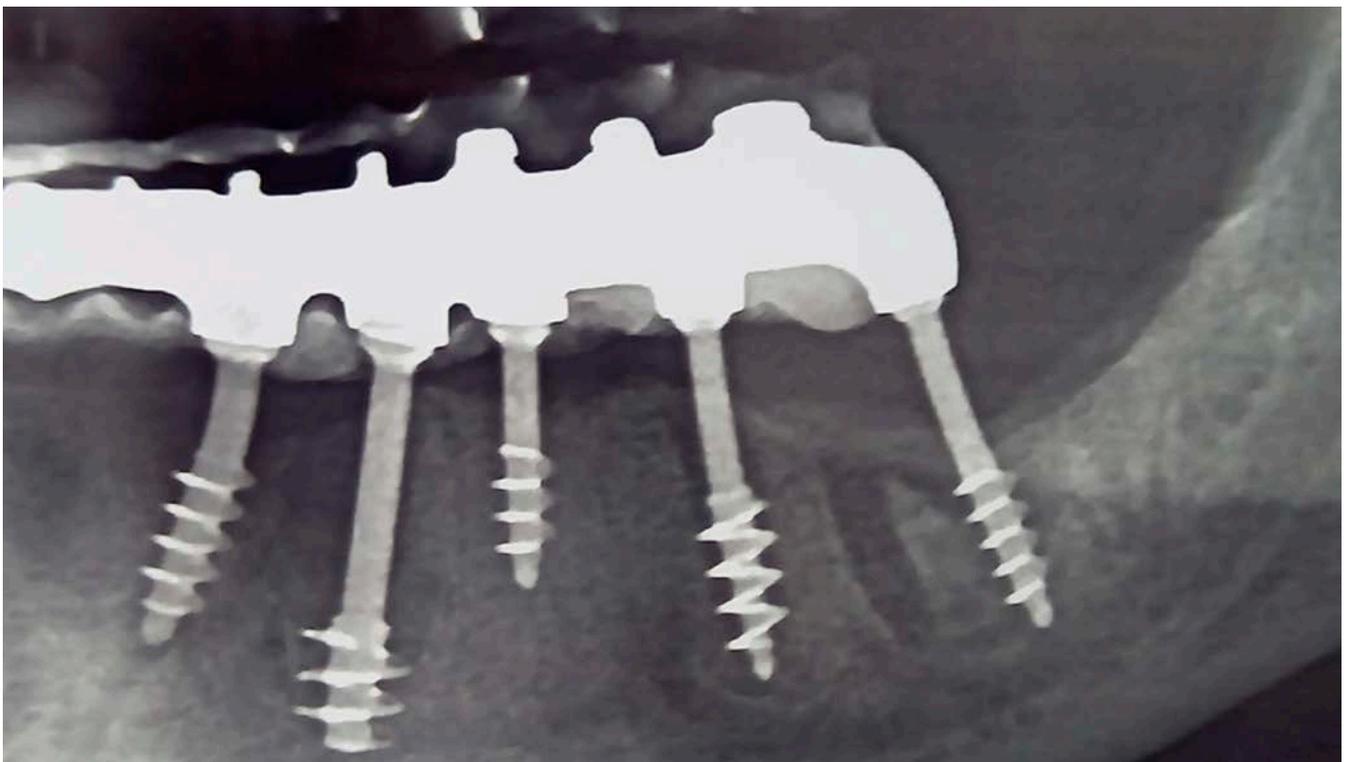


Fig. 6 During the 3-month control this picture was taken:
All defects in the bone heal unevenly and have started to mineralize.

Case 3

The patient shown in case 3 was 60 years old and he had profound periodontal involvement, partially with pockets reaching to the apex of the teeth. All teeth incl. a retented tooth 48 were removed and in the same treatment implants in the upper and lower for circular bridges were placed.

Two years later the implant sited appeared uneventfully and new bone had grown vertically upwards along the implants.

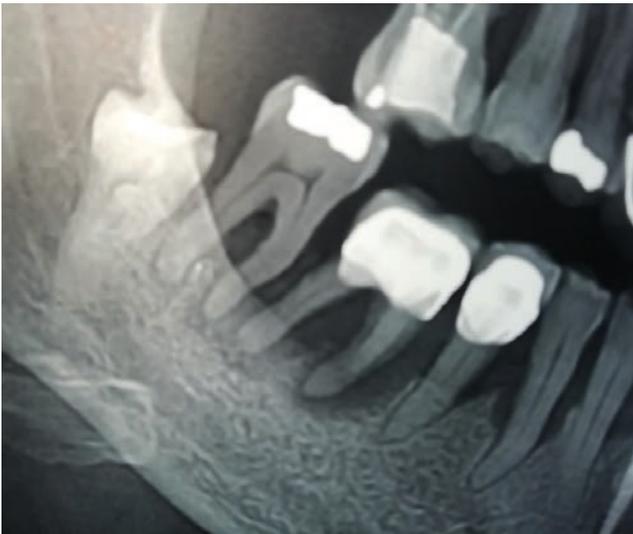


Fig. 7 Panoramic view on the lower right segment of the mandible with a retented tooth 48, and teeth 47, 46, 45 with profound periodontal involvement. Also tooth 44 is showing advanced bone loss.



Fig. 8 Three months postoperatively it is visible, that all extraction sockets are undergoing a healthy healing process, and that their bony content shows signs of mineralization.

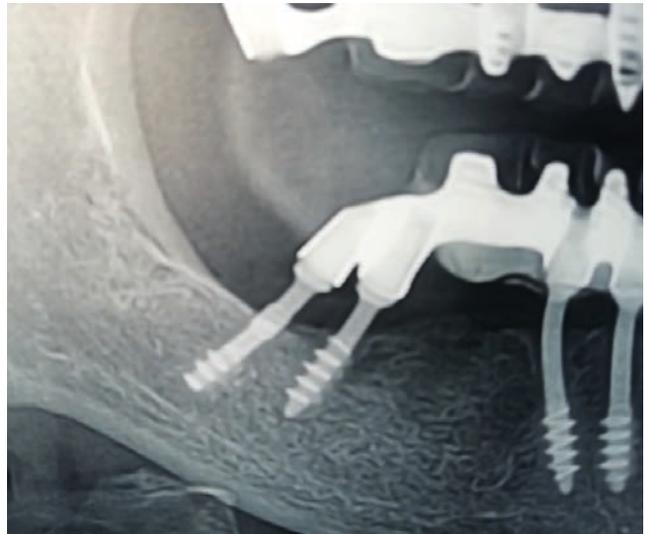


Fig. 9 After two years a new crestal bone line in the lower left mandible has developed and the former extraction sockets and pockets have almost levelled out.

Case 4

A 43 year old male patient, heavy smoker, was treated in the upper and lower jaw with the Strategic Implant[®] technology. In area 37 the periodontally involved tooth 37 was removed right before implant placement. The heavy periodontal involvement around this tooth had left almost no bone in that region. Nevertheless placement of an implant was in this region necessary, due to the fact that the area of the 2nd lower molar is a strategic position which must be equipped. Due to the low primary stability the implant was removed right after taking the (immediate post-operative) impression, and it was placed back only a few minutes before cementation. Fig. 10 shows the postoperative control radiograph (implant 37 has been removed after impression taking and it is therefore not on the picture), Fig. 11 shows the 8-month control. Area 37 is under uneventful healing.



Fig. 10 Preoperative clinical view of the Case 4 patient. Profound periodontal involvement in the distal zones. Massive accumulation of tartar in both jaws.



Fig. 11 shows severe periodontal involvement in the distal part of both jaws.



Fig. 12 Post-operative panoramic overview: Severe periodontal involvement and massive bone loss in both jaws.

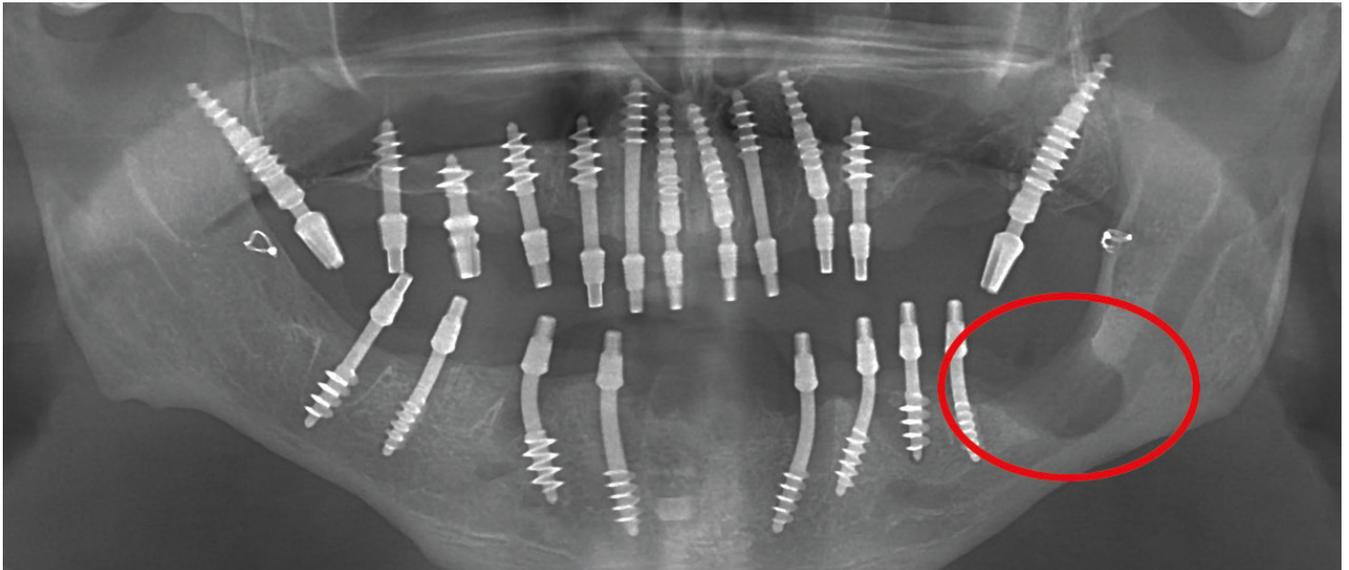


Fig. 13 Post-operative panoramic overview: The implant which had been placed in are 37 (red ring) was not very stable due to a lack of bone. It was removed after taking the impression. All implants were placed right after the removal of all teeth (see Figs. 10 and 11).



Fig. 14 Implant 37 (red ring) was placed back into the site 37 just minutes before cementing the bridge. This figure shows the view during the 8-months control. This treatment-example also shows, that "bone augmentation" is not necessary if adequate implants are chosen and the native bone in its original place is given the chance to regenerate and to build itself up.



Fig. 15 8 months postoperative clinical view show fully uneventful healing. Both jaws were equipped with metal-composite-bridges.

Results of the observations

In all cases shown here we can observe the same pattern of healing around the Strategic Implant®: While the implant is anchored in the 2nd cortical, the crestal defects heal (in the sense of a re-formation of bone in extraction sockets or increase of mineralization of bone in the area of apical granulation) the same way as if no implants were placed into them. A new crestal bone-line forms in an adequate height. Likewise the total bone volume will adjust according to Wolff's law^{IV} and there are no influences nor bone loss due to "periimplantitis" expected.

Discussion

Conventional dental implants carry massive design-derived disadvantages with them, which make simple treatments as shown in the before mentioned cases absolutely impossible. The major disadvantages of conventional 2-stage implants are: their rough surface lead inevitably to bone loss along the vertical axis of the implant and often "periimplantitis" begins after 2-3 years. Their large diameters allow placement only in selected bone areas, and their 2-piece design (implant + abutment) allow mobility between the components and thereby submucosal bacterial leakage. These are three prominent reasons for "periimplantitis". Although these disadvantages are known in the profession, the conventional (2-stage) designs are still frequently used and alternatives are either unknown to or neglected by many practitioners.

The cases shown here are "hard to believe" or to understand for followers of 2-stage-concept, because such cases conflict with all prevailing assumptions. In the 2-stage world almost always bone loss happens along the vertical axis of the implants, whereas specialists trained in the Technology of the Strategic Implant® suddenly make bone grow in crestal direction along the vertical axis of the implant.

In the field of conventional dental implantology, right after implant placement, the best situation and spatial relationship between the implant and the bone is arranged. From then on the patients situation becomes only worse and worse, until the 2-stage implant is finally failing. The users

of this these 2-stage implants have accepted this situation and they accompany their patients on the road “downhill” without being able to help them.

In contrary when the Technology of the Strategic Implant® is used, the crestal bone level is allowed to arrange itself through function derived stimuli, and neither “periimplantitis” nor peri-apical infections will deteriorate the situation. The amount of jaw bone is self-adjusting and in extraction cases bone tends to grow vertically up along the polished shaft of the implant, towards the bone’s crest. As Fig. 12 and 13 demonstrate in area 37, bone will develop/grow freely upwards along the implant.

For 2-stage implantologists not only intense new learning is required but forgetting the old rules and modalities of implantology. The Technology of the Strategic Implant® is not only a little bit different for conventional implantology, it is a completely new science^v.

In 2019 the International Implant Foundation (Munich/Germany) has published a consensus on Corticobasal® Treatment Modalities, and publications by Lazarov as well as Pałka & Lazarov have made it obvious that there are two completely different “dental implantologies” available.

In the world of 2-stage-implantology, all systems are more or less the same and show only minimal differences in implant design. All those implants, regardless of the brand, have so many shortcomings and disadvantages in common, that their use should today be quite limited.

After the Technology of the Strategic Implant® has been made available to our profession, all these disadvantages are not acceptable any more. This reduces the indications for traditional 2-stage implants drastically. The answers how patients are treated with oral implants have changed.

Conclusion

The Technology of the Strategic Implant® overcomes major disadvantage of conventional implantology:

- Implants may be placed immediately after extraction of teeth and even in such situations, where peri-apical or periodontal infections are present in the masticatory system.
- Treatments are as a rule performed in an immediate functional loading protocol.
- The Technology of the Strategic Implant® utilizes only native natural bone for the implants fixation and hence bone augmentations in general and sinus-lift-procedures are unnecessary.
- Polished dental implants placed with cortical anchorage may be used for immediate-functional loading protocols.
- Patients must be fully informed about the possibilities of the Technology of the Strategic Implant® before they can give their written consent to the treatment.

This all has changed the acceptable and contemporary treatment modalities in oral implantology.

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