Fluorescence-guided bone resection in bisphosphonate-related osteonecrosis of the jaws: first clinical results of a prospective pilot study.

Surgical debridement is the therapy of choice in advanced stages of bisphosphonate-related osteonecrosis of the jaws (BRONJ). However, the therapy is currently only loosely standardized because no suitable imaging modalities exist. This study aims to redress this by exploring the suitability and reproducibility of applying a fluorescence-guided bone resection to patients with BRONJ. This prospective pilot study comprised 15 patients with 20 BRONJ lesions (only stages II and III) with a history of intravenous bisphosphonate treatment for metastatic bone diseases. Before surgical treatment, each patient received a 10-day administration of doxycycline. Fluorescence-guided resection of necrotic bone was performed by means of a certified fluorescence lamp. Success of the procedure was proclaimed if mucosal closure was observed and symptoms were absent 4 weeks postoperatively. The 4-week postoperative follow-up identified a mucosal closure in 17 of 20 BRONJ lesions (85%). These patients were free of any symptoms. Failure as defined by mucosal dehiscence and exposed bone was observed in 3 of 20 BRONJ lesions (15%). The success rate of this surgical regimen of BRONJ was respectable, and thus fluorescence-guided bone resection can be considered an effective...
treatment for stage II and stage III BRONJ. Furthermore, the reproducibility of the technique offers an opportunity to standardize the surgical therapy. Further studies are called for that compare the fluorescence-guided bone resection with conventional surgical approaches, as well as surgical versus conservative treatment in the early stages (stages 0 and I) of BRONJ.