Incidence of maxillary sinusitis and oro-antral fistulae in bisphosphonate-related osteonecrosis of the jaw.

Bisphosphonate-related osteonecrosis of the jaw (BRONJ) is a serious side-effect of bisphosphonate therapy. In the majority of cases BRONJ occurs in the mandible. As a consequence a detailed investigation of BRONJ of the maxilla and in particular of involvement of the maxillary sinus has largely so far been neglected. The aim of this study was to analyse the frequency of maxillary sinusitis and oro-antral fistulae in BRONJ of the maxilla. A retrospective multicentre analysis was carried out in three Departments of Oral and Maxillofacial Surgery focussing on patients suffering from BRONJ in the maxilla. The role of involvement of the maxillary sinus, in particular sinusitis and oro-antral fistula, was analysed. Out of a total of 170 patients suffering from BRONJ 53 cases (31.2%) with involvement of the maxilla were identified. At least one sign of maxillary sinusitis was present in 43.6% (23/53) and an oro-antral fistula in the course of the disease was detected in 35.8% (19/53) of those patients. The mean length of time of bisphosphonate intake was 36.16±16.32 months. Zoledronate was most frequently associated (60.4%) with symptoms, followed by the combination of Zoledronate/Ibandronate (13.2%), and Zoledronate/Pamidronate or Pamidronate alone (both 7.5%). Maxillary sinusitis and
oro-antral fistulae are associated with a BRONJ manifestation in the upper jaw in approximately 44%. The involvement of the maxillary sinus should be given special attention and three-dimensional imaging modalities might be necessary, not only to evaluate the extent of necrosis, but also to exclude involvement of the maxillary sinus.