Abstract
PURPOSE: The present study provides an inventory of the number of fractures that occurred in conjunction with implant placement in edentulous patients in the Dutch population from 1980 to 2007 and estimates the incidence with which this might occur. The study also sought to define the factors that increase the risk of fracture.
MATERIALS AND METHODS: Questionnaires were sent to all 198 oral and maxillofacial surgeons working in 56 hospitals in the Netherlands. Questions were asked regarding the causes of fractures, the height of the edentulous mandible, and the methods of fracture treatment.
RESULTS: Responses were received from 53 of the 56 departments. During the study period, 157 edentulous mandibles fractured in conjunction with implant treatment. All fractures occurred in mandibles with less than 10 mm of height, as measured in the symphysis. An incidence of less than 0.05% was estimated based on an estimated number of 475,000 patients treated with at least two implants during this time to support an overdenture. Reasons for early implant failures were insufficient bone volume, iatrogenic causes, nonintegration, and a narrow arch. Peri-implantitis, trauma, and explantation were associated with fractures occurring 1 year or more after implant placement. Several methods were employed to treat the fractured mandibles, including closed reduction, rigid fixation using osteosynthesis plates, and bone grafts with fixation. In 52% of patients, fracture healing was uneventful; however, in 48% of patients, complications were encountered, including osteomyelitis, nonunion, plate fracture, screw loosening, and dehiscences with subsequent infections.
CONCLUSIONS: Mandibles with a height of 10 mm or less, as measured at the symphysis, are at risk of fractures and associated complications. The provision of proper informed consent regarding the advantages and disadvantages of placing implants in thin mandibles is essential.