INTRODUCTION
Although success rates of orthograde endodontic (re)treatment in clinical studies are fairly high (Ng et al. 2008), the clinician is regularly confronted with treatment failures. When conventional (re)treatment does not result in a positive outcome, a surgical approach including reflection of a mucoperiosteal flap, apical curettage, root end resection and root end filling is usually the treatment of choice. However, endodontic surgery is sometimes contra-indicated or undesired due to anatomical or patient-related factors. In these cases, extraction and intentional replantation might be a treatment alternative (Kratchman 1997).

CASE PRESENTATION
Case 1. A 71-year-old female patient was referred for treatment of tooth 16 with vertical mobility, a sinus tract and an extensive periapical lesion. There were no increased probing depths. Orthograde root canal therapy was initiated and completed over several visits, with calciumhydroxide interim dressing. Upon recall thirteen months later, the vertical mobility had not improved and the sinus tract had returned.

Due to the size of the lesion, its protrusion into the maxillary sinus, and the age of the patient, an intentional replantation procedure was proposed. After administration of local anaesthesia, the tooth was extracted atraumatically. A large cystic lesion was curetted through the socket with the aid of the surgical operating microscope (Zeiss Opmi ProErgo). Blow test was negative. The apices of the tooth were resected extra-ori ally using a high-speed diamond bur. Microscopic inspection of the resected surfaces revealed no abnormalities. Because the curettage took some time, no retrograde preparation or filling was done in order not to extend the extra-oral time. The tooth was repositioned into the socket and stabilized with a 4-0 polyglyactin (Vicryl) suture. The postoperative course was normal. Sutures were removed after 2 weeks. Eight months later, the patient is free of symptoms. The fistula has disappeared and tooth mobility has returned to normal. A periapical film shows healing of the apical lesion.

Case 2. A 38-year-old female patient sought advice concerning sensitivity and mild pain on biting related to tooth 37, that had been endodontically treated by a specialist because of pulpitis 7 years earlier. The tooth was found percussion sensitive, and the periapical radiograph showed a radiolucency lesion around the apices. Because previous treatment had been executed by a specialist, and because of the proximity of the inferior alveolar canal, neither retreatment nor surgical endodontics were indicated, and an intentional replantation procedure was proposed.

Tooth 37 was extracted under local anaesthesia. During the extraction, the crown came off and the apical half of the mesial root fractured. The apical part was retrieved from the socket with the help of an excavator. The distal apex was resected extra-ori ally using a high-speed diamond bur, and a retrograde preparation was made in both roots, including the isthmus in the mesial root, under magnification. Retrograde filling was done using MTA (ProRoot, white). The tooth was repositioned into the socket and stabilized with a 4-0 polyglactin (Vicryl) suture.

One year later, the tooth is asymptomatic. The tooth is periodontally healthy and has normal mobility, although the crown has not been restored yet. The radiograph shows complete apical osseous healing.

DISCUSSION
In the present two cases, teeth with failing orthograde treatment where endodontic surgery was not indicated, could be retained by intentional replantation. This treatment option is not frequently performed, probably because often advocated as a procedure of last resort, inspired by negative opinions in the past. However, a recent systematic review reported a mean survival rate of 88% for intentionally replanted teeth (Torabinejad et al. 2015). A prospective cohort study of contemporary intentional replantation suggested a cumulative 12-year retention rate of 93% and healed rate of 77% after 3 years (Cho et al. 2016). These figures prove intentional replantation to be a valid treatment option.

Ankylosis, resorption and persistent periapical radiolucency are the most important complications, mostly occurring within the first year after treatment (Cho et al. 2016). Therefore, the vitality of the PDL has to be safeguarded trough atraumatic extraction, avoiding desiccation (keeping the root surface moist) and limiting the extra-oral time. This will maximize the potential for resorption-free reattachment. In addition, the infectious origin of the pathosis needs to be eliminated. Therefore principles of endodontic microsurgery need to be followed including root end resection and –filling, creating the best conditions for apical healing.

CONCLUSION & CLINICAL RELEVANCE
Intentional replantation should not be overlooked as a treatment option for cases where neither orthograde (re)treatment nor apical surgery is feasible or indicated.

REFERENCES