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# MRONJ and implants: the risk of developing necrosis away from surgery

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**Funding:** The author(s) received no specific funding for this work.

**Potential competing interests:** The author(s) declared that no potential competing interests exist.

## Abstract

This study aimed to evaluate the prevalence of MRONJ in patients treated with prosthetic implant rehabilitation. We evaluated the risk of MRONJ genesis comparing implant surgery with the development of necrosis after correct implant osteointegration. The implants' presence in these patients is a possible risk factor of necrosis development. The presence of implant might cause a reactivation of osteoclasts.

## Background

Medication-related osteonecrosis of the jaws (MRONJ) is a potential pharmacological complication of therapy with bisphosphonates and some monoclonal antibodies as well as biologic agents. This study aimed to evaluate the prevalence of MRONJ in patients treated with prosthetic implant rehabilitation. We evaluated the risk of MRONJ genesis comparing implant surgery with the development of necrosis after correct implant osteointegration. We focused the attention on the implants' presence in these patients like possible risk factor of necrosis development.

## Materials and methods

Our study focused the attention on the analysis of MRONJ sites associated with the presence of implants <sup>[1]</sup>. In particular, we considered two different groups of patients: G1 developed necrosis within ten months of implant surgery; G2 developed necrosis after 10 months of implant placement and osseointegration. We also considered the genesis of MRONJ focused the attention on the localization of necrosis.

## Results

Twenty-eight patients affected by MRONJ are included in the present evaluation. Among these, 21 (75%) female and 7 (25%) male, 18 (64.3%) cancer and 10 (35.7%) non-cancer with an average age of 63 years old (range 38-80).

Considering the patients included in this study, we analyzed thirty-three MRONJ sites. Among these, 21 (63.6%) associated to cancer and 12 (36.4%) non cancer, 25 (75.8%) sites in female and 8 (24.2%) sites in male.

Our case series describes two groups of implant patients: in G1 7 (21.2%) MRONJ sites characterized by implant surgery performed less than 10 months before necrosis; in G2 26 (78.8%) MRONJ sites in which necrosis began 10 months after

surgery (range 14-222 months). In G2 the presence of osseointegrated implant might be a risk factor for the necrosis development.

Considering the location of the necrosis, we analyzed 17 (51.5%) sites in lower jaw, 7 (21.2%) sites in upper jaw and 9 (27.3%) sites in mandibula e maxilla at the same time. In particular, we analyzed 3 (9.1%) sites localized in anterior sector and 30 (90.9%) in posterior sector.

Based on the AAOMS classification (update 2014), the present study included 15 (45.4%) sites in stage I, 11 (33.3%) in stage II and 7 (21.2%) in stage III [2][3].

## Conclusions

Implant surgery is one of the causes of MRONJ more in oncological patients than patients with osteometabolic disorders. Moreover, it's important to consider how the implant placement many years before the beginning of drug therapy is however a risk factor for the MRONJ genesis. In this kind of patients. presence of implant is an important risk factor for MRONJ development, in particular in posterior sectors of mandibula and maxilla. So, presence of implant in patients treated by bisphosphonate or other drugs associated with ONJ is a risk factor of necrosis development as the implant surgery. The presence of implant might cause a reactivation of osteoclasts [4].

## References

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