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Bisphosphonate Related Osteonecrosis of Maxilla Following Implant Failure – A Case Report

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Abstract:

Marx in the year 2003 , defined osteonecrosis of the jaw (ONJ) as exposed , necrotic bone in the maxillofacial region for atleast eight weeks in patients receiving anti – resorptive medication for primary or metastatic bone cancer , osteoporosis or Paget's disease , without history of radiation therapy to the jaws [1]. The AAOMS , modified the above definition to include exposed bone , or bone that can be probed through an intra oral or extra oral fistula in patients who are on antiresorptive or anti angiogenic medications [2].

Bisphosphonates treatment has been found to be a major factor contributing to the development of osteonecrosis of the jaws . Bisphosphonate related osteonecrosis of the jaws is the most common side effect of bisphosphonate treatment , without previous history of radiation therapy to the jaws [1]. According to Kurtzman , it is considered to be a long term and irreversible , even on discontinuation of drugs[3].

INTRODUCTION:

Marx in the year 2003 , defined osteonecrosis of the jaw (ONJ) as exposed , necrotic bone in the maxillofacial region for atleast eight weeks in patients receiving anti – resorptive medication for primary or metastatic bone cancer , osteoporosis or Paget's disease , without history of radiation therapy to the jaws [1]. The AAOMS , modified the above definition to include exposed bone , or bone that can be probed through an intra oral or extra oral fistula in patients who are on antiresorptive or anti angiogenic medications [2].

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As mentioned by Ruggiero et al. , oseteonecrosis of the jaw occurs more in th mandible and less in the maxilla [4]. The reason for this being good vascularisation and high bone turnover rate in the maxilla . Hence , maxillary ONJ lesions are extremely rare .

The possibility to perform dental extractions and dental implant placement in bisphophonate or anti resorptive agent users , continues to be a controversy . The American Association of oral and maxillfacial surgeons contraindicate implant surgery in patients who are under anti – resorptive therapy[2] .

This article reports the rare occurrence of osteonecrosis of the maxilla associated wht implant failure in a patient who underwent bisphosphonate therapy.

CASE REPORT :

A 48 year old male patient , reported to Sree Balaji Dental College and hospital , Chennai . The patient complained of swelling , pain and burning sensation in the maxilla for 1 month .

The patient had a history of osteoporosis for the past 2 years and was under bisphosphonate therapy . All on four implants were placed in the maxilla 1 year back , the prosthetic rehabilatation was also completed , at a private dental clinic .

On examination , extra orally – no abnormality was detected . Intra orally , a firm swelling was observed in the maxillary region , upto the hard palate . Necrosed maxillary bone was exposed . The implants and the prothesis were mobile . It was also observed that the implants were exposed .

Local anaesthesia was administered and the prosthesis was removed , as the first step . The following (FIG. 1)is the intra oral picture after the removal of the prosthesis .

FIG 1: NECROSED MAXILLARY BONE AND EXPOSED DENTAL IMPLANTS

A crestal incicision was placed extending from 17 to 27 region . Mucoperiosteal flap was elevated (FIG 2 &3). The dental implants were removed . Sequestrum was removed (FIG. 3) . Debridement and curettage was done . Thorough metrogyl irrigation was carried out . Primary closure was done with silk suture (FIG. 4) .

FIGURE 2

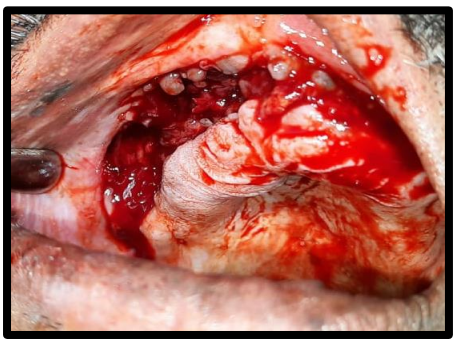

FIGURE 3

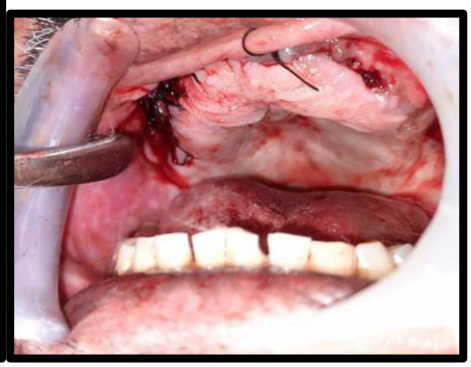

FIGURE 3 **FIGURE 4**

The patient was then administered with antibiotics and anti inflammatory medications . Review was done on the fifth and seventh post operative day .

DISCUSSION :

The patient had a history of taking Alendronate for 2 years , when he had presented for implant placement in the maxilla at a private dental clinic . The presence of clinically visible necrosed bone in the maxilla ,mobile dental implants , chronic pain and burning sensation in the maxilla , as observed during examination of the patient , was suggestive of stage II Bisphosphonate related osteonecrosis of the jaw (BONJ) , as per the staging system given by Ruggiero et al[5]. The histopathological report confirmed the same .

As mentioned by Petropoulous et al. , several studies quote that there is a decreased incidence of osteonecrosis when the patient has been on oral bisphosphonate therapy for less than five years [6]. In a study conducted by Fuggazo et al. [7], it was conlcuded that patients who were on bisphosphonate therpay for an average duration of 3.3 years , did not experience any incidence of osteonecrosis following implant placement in intact alveolar ridges or following immediate implant placement after tooth extractions . Another study by Madrid and Sanz [8], stated that no BONJ was observed in patients who took bisphosphonates for less than 5 years . Hence , the case reported in this article is a rare incident , as the patient ws on bisphosphonates for only 2 years .

A detailed treatment protocol was laid down by Rugeeiro et al. for evert stage of bisphosphonate related osteonecrosis of the jaw . It was stated that for stage III disease , as seen in this case , surgical debridement of necrotic bone ,followed by antimicrobial therapy , analgesics and anitmicrobial rinses is the best treatment protocol [7]. As per the prescribed treament protocol , surgical debridement was carried out for this patient , followed by medication , after the culture results were obtained .

CONCLUSION :

In conclusion , although bisphosphonate related osteonecrosis of the jaw is not encountered very often , it is essential that the diagnosis and management of this condition is known by

every oral and maxillofacial surgeon . A complete history must be taken by the oral surgeon , before placement of dental implants , so as to avoid the failure of implants .

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