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## **Intra alveolar carcinoma diagnosed after teeth extraction - case series and a review**

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### **Abstract**

Intra alveolar carcinoma of the jaw is rare and a unique entity among the group of malignant tumors of the jaws. They are usually asymptomatic until they become quite large and also represent the area of greatest histological diversity. Here we report two cases of intra alveolar carcinoma, who presented with ulcer proliferative growth. Histopathological diagnosis was Squamous cell carcinoma. Diagnosis of intra alveolar carcinoma through microscopic examination of serial specimen sections is required to rule out the presence of odontogenic tumor cells. The definitive diagnosis of intra alveolar carcinoma is very difficult because the lesion must be distinguished from tumors that have metastasized to the jaws from distant sites especially from tumors of maxillary sinus origin. In conclusion, our case reports showed that clinicians must be aware that intra alveolar carcinoma may initially present as routine dental problems that leads to misdiagnosis or delayed diagnosis.

**Keywords:** Intra Alveolar Carcinoma, non-healing socket, chronic smoking, irregular radiolucency

### **1. Introduction**

Cancer is the most pernicious insidious disgusting disease of life and it can make the most life changing events in one's life. Head and neck cancers are more common because of our social oral habits as a risk factor and often curable if it diagnosed early. Intra alveolar carcinoma of the jaw is rare and a unique entity among the group of malignant tumors of the jaws. In India, the main reason for the outbreak proportion of oral cancer is the rampant use of tobacco chewing as a psychoactive stimulant and later patients will come for extraction of the teeth following tooth mobility. Here we report two cases of intra alveolar carcinoma and which become evident after teeth extraction.

### **2.1. Case report 1**

A 50 year old male presented at our department of maxillofacial surgery with a pain in the right posterior maxillary alveolar region and also has difficulty in opening the mouth which had been present for 1 month. The patient reported with history of tooth extraction (right maxillary second molar) by a local dentist due to severe mobility 1 month previously. Patient did not reveal any swelling or bleeding from the socket region. His medical history was noncontributory and social history revealed a risk habits of beedi smoking for 20-30 years which gave a significant contribution to his current presentation. Exploration of his family history did not reveal a similar pathology. A general examination of the patient revealed no significant findings and all vital signs within the normal range. There was no significant swelling asymmetry and change in the skin present extraorally. On intra oral examination, a non-healing extraction socket present wrt 17 region with a small ulcer proliferative growth, with a size of 2cm\*3cm extending to the vestibular sulcus region and crossing the palate 1cm away from the non-palatine region (Fig - 1). Lesion appears to be red, surrounded by erythematous borders and surrounding areas appears to be normal with no secondary changes. All inspectory findings were confirmed on palpation. It was tender on palpation and soft in consistency and diffused to the surrounding mucosa. Right submandibular lymph nodes were tender, palpable and hard in consistency. Based on the history and clinical finding, our primary diagnosis was oroantral fistula. Differential diagnosis includes infected residual cyst, chronic osteomyelitis, inverted papiloma, intra alveolar carcinoma, malignant ulcer of the right posterior maxilla was contemplated.



Fig - 1



Fig - 2

As a part of radiological examination, panoramic radiograph of upper and lower arch showed that partially edentulous upper and lower arch, a well- defined radiolucency was seen at edentulous space of 16, 17 region with the discontinuity of maxillary sinus floor and irregular pattern of bone loss and generalized bone loss was noticed. For histopathological analysis, incisional biopsy of the 17 region was performed and specimen subjected to laboratory (Fig - 2).

Microscopical section showed strands and sheets of tumor cells with dysplastic features like hyperchromatism, cellular and nuclear pleomorphism, altered N/L ratio and abnormal mitosis. Considering these features, final diagnosis was poorly differentiated squamous cell carcinoma. Patient was reported after 7 days for the suture removal, but the size of the lesion was increased dramatically and that made us to think for a higher treatment options.



Fig - 3

OPG was repeated and showed that discontinuity of maxillary sinus floor on the right side was evident (Fig - 3). Considering the aggressiveness and size of the lesion (radiographically) patient was referred to higher centres and advised for advanced treatment.

**2.2. Case report 2**

A 55 years old, healthy male patient was referred to the department of maxillofacial surgery with pain on the left mandibular region. Patient was already visited a local dental practitioner because of excessive mobility of the teeth and got extracted one week back. Clinical examination showed an ulcer proliferative growth on the left lower vestibular region, extending from the 33 region to the 36 region anteroposteriorly and extending to the labial and lingual vestibule mediolaterally (Fig - 4). Left submandibular lymph nodes were palpable and tender



Fig - 4



Fig - 5

A panoramic radiograph was performed, it showed as an extensive ill defined radiolucent lesion showing irregular margins in the mandibular posterior region approaching mandibular canal (Fig - 5). An incisional biopsy was performed under LA in our department and histological examination revealed a well differentiated squamous cell carcinoma. Patient was not turned for the further follow ups and treatments.

**3. Discussion**

Intra alveolar carcinoma are rare neoplasms and have an aggressive growth and dreary prognosis. They are usually asymptomatic until they become quite large and also represent the area of greatest histological diversity<sup>1</sup>. Among oral cancers, squamous cell carcinoma of maxillary alveolus represent 3.5 – 6.5% and squamous cell carcinoma of mandibular alveolus represents 7.5-17.5%. Risk factor for intra alveolar carcinoma includes tobacco chewing, exposure to alcohol consumption and also associated with reverse smoking. Reverse smoking is a habit practised in different parts of India by women.

Majority of this cancer can occur at any age, even though it is commonly present in 7<sup>th</sup> decade with slightly more common in males. Mandibular intra aleolar carcinoma is three times more common than maxillary alveolar carcinomas. In 1971, Pindborg coined the term ‘primary intra alveolar carcinoma’ [2, 3]. According to WHO, it is defined as squamous cell carcinoma arising within the jawbones without connection to

the oral mucosa<sup>[4]</sup>, probably from odontogenic epithelial residues. The degree of differentiation varies and may be getting poorer with time<sup>[5, 6, 7]</sup>. Prognosis is hard to estimate and so the treatment can be given as the earliest as possible. The most common signs and symptoms with intra alveolar carcinoma includes pain, swelling, history of excessive tooth mobility. In mandible includes in sensory disturbances such as lip or facial paraesthesia and numbness. Early symptoms of these carcinomas are inconsistent and are often misdiagnosed as secondary ulceration of the oral mucosa caused by a traumatic tooth extraction, ulceration caused by a nonhealing extraction socket, periodontal and periapical diseases. Previous reports showed that ulcer formation is a rare event in intra alveolar carcinomas. This alarming difference certainly raises the possibility of diagnostic delay.

#### Diagnostic factors for intra alveolar carcinoma

- Loose teeth with chronic smoking history
- Non healing growth or ulceroproliferative lesion /extraction sockets
- Irregular radiolucency

In our first case, patient was reported with a pain in relation to extracted socket which was developed with pain and presence of small ulcerative growth in right maxillary region followed by extraction. Patient showed symptoms of an oroantral fistula and we have included a possibility of oroantral communication also. But none of the features of intra alveolar carcinoma was noticed. The evidence of small ulcerative growth made us to rethink for a histological examination. Orthopantomogram showed great variation in size and shape of maxillary alveolus with indistinct margins. Ideally, intra alveolar carcinoma should be surrounded by the bone on radiographic examination but in our case, it is showed an extensive destruction of maxillary alveolus with ragged borders and infiltration of the soft tissues at the time of diagnosis. So, this feature shows that, tumor is aggressive and in its advanced stage. The definitive diagnosis of intra alveolar carcinoma is very difficult because the lesion must be distinguished from tumors that have metastasized to the jaws from distant sites especially from tumors of maxillary sinus origin. In intra alveolar carcinoma of mandible, posterior mandibular region is predominant in location but the reports of lesion in posterior maxilla are very less because of the difficulty of differentiating intra alveolar carcinoma from carcinoma of maxillary sinus origin<sup>[8]</sup>. This makes our first case report an unique. Eventhough there is a possibility of the lesion metastasis should be considered, for that we referred the patient for higher investigation.

In our second case, we emphasize the importance of early treatment of intra alveolar carcinoma, which is the most important factor that affect the both survival and recurrence rate. To *et al.* reported a 46% of survival for periods ranging from 6 months to 5 year. But our patient survived only for 3 months. There is a also a great chance of intra alveolar carcinoma of mandible can occur mainly from the breast, thyroid, kidney and lungs. Investigations of primary tumor should include a chest radiography and patient require regular follow ups. Intra alveolar carcinomas doesnot show unique features on histopathological examination but rather the typical presentation is similar to that squamous cell carcinoma. Diagnosis of intra alveolar carcinoma, thorough microscopic examination of serial specimen sections is required to rule out the presence of odontogenic tumor cells. So, it should be considered as a high malignancy and

treatment should be done aggressively. In this case, patient was refused the treatment and it is unethical to physically force or coerce a patient into a treatment against his decisions if he is sound mind and is mentally capable of making a informed consent.

#### 4. Conclusion

In conclusion, our case reports showed that clinicians must be aware that intra alveolar carcinoma may initially present as routine dental problems that leads to misdiagnosis or delayed diagnosis. Therefore, careful evaluation and follow up are recommended for the early diagnosis of intra alveolar carcinoma.

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