World Academy of Science, Engineering and Technology
International Journal of Mechanical and Materials Engineering
Vol:12, No:04, 2018

Radiographic Evaluation of Odontogenic Keratocyst: A 14 Years Retrospective Study

Authors : Nor Hidayah Reduwan, Jira Chindasombatjaroen, Suchaya Pornprasersuk-Damrongsri, Sopee Pomsawat

Abstract : INTRODUCTION: Odontogenic keratocyst (OKC) remain as a controversial pathologic entity under the scrutiny of many researchers and maxillofacial surgeons alike. The high recurrence rate and relatively aggressive nature of this lesion demand a meticulous analysis of the radiographic characteristic of OKC leading to the formulation of an accurate diagnosis. OBJECTIVE: This study aims to determine the radiographic characteristic of odontogenic keratocyst (OKC) using conventional radiographs and cone beam computed tomography (CBCT) images. MATERIALS AND METHODS: Patients histopathologically diagnosed as OKC from 2003 to 2016 by Oral and Maxillofacial Pathology Department were retrospectively reviewed. Radiographs of these cases from the archives of the Department of Oral and Maxillofacial Radiology, Faculty of Dentistry Mahidol University were retrieved. Assessment of the location, shape, border, cortication, locularity, the relationship of lesion to embedded tooth, displacement of adjacent tooth, root resorption and bony expansion of the lesion were conducted. RESULTS: Radiographs of 91 patients (44 males, 47 females) with the mean age of 31 years old (10 to 84 years) were analyzed. Among all patients, 5 cases were syndromic patients. Hence, a total of 103 OKCs were studied. The most common location was at the ramus of mandible (32%) followed by posterior maxilla (29%). Most cases presented as a well-defined unilocular radiolucency with smooth and corticated border. The lesion was in associated with embedded tooth in 48 lesions (47%). Eighty five percent of embedded tooth are impacted 3rd molar. Thirty-seven percentage of embedded tooth were entirely encapsulated in the lesion. The lesion attached to the embedded tooth at the cementoenamel junction (CEJ) in 40% and extended to part of root in 23% of cases. Teeth displacement and root resorption were found in 29% and 6% of cases, respectively. Bony expansion in bucco-lingual dimension was seen in 63% of cases. CONCLUSION: OKCs were predominant in the posterior region of the mandible with radiographic features of a well-defined, unilocular radiolucency with smooth and corticated margin. The lesions might relate to an embedded tooth by surrounding an entire tooth, attached to the CEJ level or extending to part of root. Bony expansion could be found but teeth displacement and root resorption were not common. These features might help in giving the differential diagnosis.

Keywords : cone beam computed tomography, imaging dentistry, odontogenic keratocyst, radiographic features
Conference Title : ICDODI 2018 : International Conference on Dentistry, Orthodontic Dental Implants
Conference Location : Kyoto, Japan
Conference Dates : April 26-27, 2018