



Pictorial Review

Incidental bony pathology when reporting trauma orthopantomograms

M. Macanovic^{a,*}, S. Gangidi^a, G. Porter^a, S. Brown^a, D. Courtney^a, J. Porter^b

^a Derriford Hospital NHS Trust, Plymouth, UK

^b Community Dental Service, Plymouth Primary Care Trust, Plymouth, Devon, UK

ARTICLE INFORMATION

Article history:

Received 6 January 2010

Received in revised form

23 May 2010

Accepted 2 June 2010

Radiologists frequently report orthopantomograms (OPTs) and other views of the mandible, most often in patients who have suffered facial trauma. These examinations may reveal incidental pathology. It is important that radiologists are aware of the radiological appearances and the clinical significance of these lesions. In this review we will present examples of the more common odontogenic lesions including: radicular cyst, odontogenic keratocyst, dentigerous cyst, ameloblastoma, and also examples of non-odontogenic pathology: bisphosphonate-related osteonecrosis of the jaw (BRONJ) and chronic osteomyelitis. Although some of the lesions will require computed tomography (CT) or magnetic resonance imaging (MRI) for further lesion characterization and evaluation of the surrounding tissues, we are going to focus on the plain film appearances. We will also briefly discuss the pathogenesis, epidemiology, and treatment of these lesions.

© 2010 The Royal College of Radiologists. Published by Elsevier Ltd. All rights reserved.

Introduction

The orthopantomogram (OPT) is a radiographic view produced from dental panoramic tomography. This view is commonly requested by dentists and maxillo-facial surgeons to assess dentition, periodontal bone support, maxillary and mandibular bony structures, temporomandibular joints, and maxillary sinuses. It is also one of the two standard radiological views requested when querying mandibular fractures in our institution. General radiologists interpret these views and formal reports are issued to the emergency department practitioners.

It is the aim of this review to familiarize the reader with some common and some not so common maxillo-facial disease entities that may be encountered incidentally when reviewing OPT images and to allow the reader to develop an

approach to describing their appearance and to develop a differential diagnosis.

We will concentrate on the features and radiographic appearances of radiolucent odontogenic lesions as they are most likely to be encountered as incidental findings.¹ We will describe appearances of inflammatory radicular cysts, developmental dentigerous cysts, and keratocysts. Although less common, ameloblastoma is also included as it falls in the category of odontogenic tumours and is of clinical importance as it can be locally invasive and usually requires more radical treatment compared to other odontogenic lesions.

In this review we will also present examples of chronic osteomyelitis of the jaw and bisphosphonates-related osteonecrosis of the jaw (BRONJ). BRONJ is a condition that is increasing in incidence with the increasing use of bisphosphonates used in the treatment of a number of bone diseases.

Throughout the review we will be employing the Triadan teeth nomenclature system and an explanation of this system is provided in Fig. 1.

* Guarantor and correspondent: M. Macanovic, Derriford Hospital NHS Trust, Plymouth, Devon, UK. Tel.: +44 01752 437437; fax: +44 01752 315300
E-mail address: mladenmaca@gmail.com (M. Macanovic).

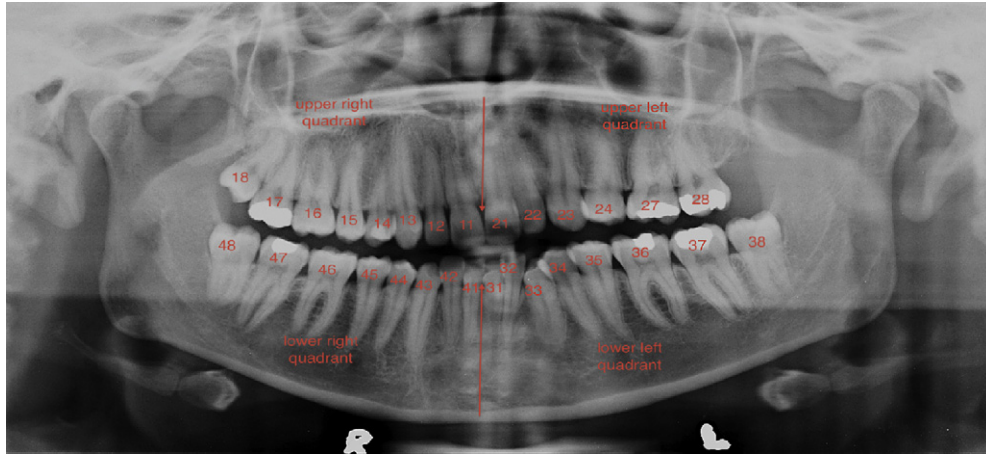


Figure 1 On an OPT the teeth are divided into four quadrants. The quadrants are labelled 1 to 4 from the upper right in a clockwise fashion. Each tooth is prefixed with a number according to the quadrant they belong to. Teeth in each quadrant are then labelled 1 to 8 starting with the incisor.

Odontogenic lesions of the jaw and maxilla

Odontogenic cysts arise from epithelial residues of the tooth-forming organ and may be developmental or inflammatory in origin.^{1,2} Their radiological appearances are typical of a slow-growing lesion and the majority are unilocular and radiolucent. Some lesions can contain internal septae that give them a multicystic or multiloculate appearance. With the exception of odontogenic keratocyst, they expand by fluid accumulation.³ Their margins are usually well-demarcated, although they can become ill defined if infected.

Anatomical relation to dentition can be very helpful in distinguishing them from non-odontogenic lesions. Odontogenic lesions usually occur adjacent to one tooth or a part of the tooth and tend to displace rather than cause resorption of the tooth roots.³ In contrast, non-odontogenic lesions either do not have any relationship with a specific

tooth or involve the bone around several teeth. Non-odontogenic lesions also do not have a corticated margin and rarely cause expansion.¹

Radicular cysts

Radicular cysts are the most common odontogenic cystic lesions. They arise as a sequel to inflammatory dental disease that leads to pulpal necrosis and formation of a periapical granuloma.⁴ They form during a process that follows proliferation, expansion, and then necrosis of a dental granuloma.³ They most frequently present in the third and fourth decades.⁵ Smaller cysts usually present incidentally whereas larger lesions can present as a hard swelling that may become soft or even fluctuant if the cyst has eroded through the bony cortex.⁶ Radicular cysts are painless unless secondarily infected. They are also known as periapical cysts, root-end cysts, or dental cysts.

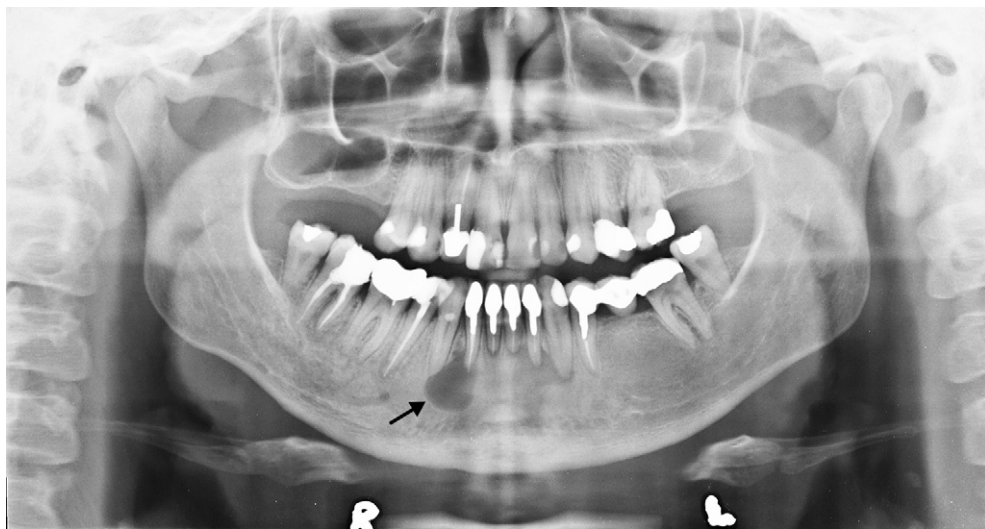


Figure 2 Large, periapical cyst associated with restored lower anterior teeth in a 44-year-old man. A well-outlined radiolucency extends from the periapical tissue of 42 across the midline to 33. Note the root treated 32–42 teeth.

Download English Version:

<https://daneshyari.com/en/article/3983563>

Download Persian Version:

<https://daneshyari.com/article/3983563>

[Daneshyari.com](https://daneshyari.com)