LETTER TO THE EDITOR

Why should we insist patients remove all jewellery?

Dentomaxillofacial Radiology (2011) **40**, 328–330. doi: 10.1259/dmfr/77333052

Body piercing is now a popular trend among adolescents and adults. According to Armstrong et al,¹ body piercing is defined as the insertion of a needle to create an opening into either cartilage or skin for the introduction of decorative jewellery. A study at one US college found the prevalence of body piercing was 51% among 454 undergraduate students who completed a survey in 2001.² Another study at an urban hospital-based adolescent clinic found that, among 225 participants aged between 12 and 21 years in 2000, 48% had a body piercing. Among this sample of pierced participants the most common sites for body piercings were the ears (74%), nose (34%), tongue (30%), navel (27%) and eyebrow (15%), with fewer than 7% reported piercings in other places.³ Of concern for oral and maxillofacial imaging are piercings in the ears, nose and tongue owing to the potential for metallic artefacts in the radiographic images.

A 30-year-old female attended the emergency dental clinic in the Oral and Maxillofacial Radiology Clinic at Texas A & M Health Science Center, Baylor College of Dentistry and a panoramic projection (Figure 1) was

taken. The patient stated that she could not remove the earrings before the X-ray exposure. As a result, the image had large ghost images across the maxillary sinuses from the retained earrings. During a surgical procedure the same day, the oral and maxillofacial surgeon extracted a non-restorable right maxillary second molar and tooth fragments/odontomas distal to this second molar. Owing to the serous fluid expressed from a sinus fistula in that area, the oral and maxillofacial surgeon ordered a follow-up appointment with a new panoramic projection. The patient was informed that she must remove all of her earrings before the second radiograph to clearly visualize the entire right maxillary sinus and rule out the possibility of a cystic lesion. The panoramic projection (Figure 2) was taken at the Oral and Maxillofacial Radiology Clinic 1 week later. A displaced impacted tooth was noted at the superior border of the right maxillary sinus. A cone beam CT (CBCT) study was acquired 2 days later. A cystic lesion associated with the impacted tooth in the right maxillary sinus/orbit area was noted (Figure 3). Biopsy and surgical treatment are pending.

Figure 1 Panoramic radiograph for the extraction of right maxillary second molar and ghost images of earrings noted (arrow heads)

Figure 2 Panoramic radiograph 1 week later and a displaced impacted tooth noted in the right maxillary sinus region (arrow)

Earrings are the most popular type of body piercing. It is common today to find both male and female patients with unilateral or bilateral ear lobe jewellery, in single or multiple pierced sites. Some patients are unable to remove the piercings because of permanent soldering of the metals. To remove or not to remove...

that is the question. In a well-positioned panoramic projection the metal-based earrings will be visible, along with the ghosting caused by these objects. The non-midline ghost images appear more superior on the contralateral side and reversed with less definition than the image of the actual objects. Along with earrings, an

a

b

Figure 3 Cone beam CT images. (a) Coronal view; (b) frontal three-dimensional image

increasing number of patients present to dental clinics wearing jewellery inserted into the perioral (lips and cheeks) and intraoral tissues (tongue and uvula), or any combination of these sites.⁴ While some practitioners routinely recommend that all jewellery be removed, others feel that a selective approach to removal of jewellery is appropriate. If the object is thought to interfere with the diagnostic quality of the film then it should be removed.⁵ When metal jewellery is present during radiographic examination, it may prevent visualization of normal anatomy and/or pathoses, as in this case. Non-diagnostic images may lead to retakes, with an increase in ionizing radiation exposure to the patient. By avoiding production of these artefacts when possible, we can reduce radiation exposure to patients while obtaining the most diagnostically acceptable

images possible.⁵ In summary, patients should be strongly advised to remove any piercings of the head and oral cavity that will be visualized in the radiographs before X-ray exposure and counselled as to the consequences of failure to do so.

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