IN BRIEF

- Patients who have suffered myocardial infarction may not recognise that their pain is due to angina.
- Cardiac pain may radiate to the face and lead patients to seek dental care.
- Dentists may help diagnose ischemic heart disease.

Bilateral facial pain from cardiac origin. A case report

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A case of a 65-year-old female patient is reported. Her chief complaint was facial pain, so she sought care from her general dental practitioner for evaluation of a suspected temporomandibular disorder, after repeated visits to the emergency department due to excruciating facial pain associated with exertion. The dental examination revealed an edentulous upper and lower jaw. Radiographs of the facial bones revealed no abnormalities. Eventually, she was referred for cardiological evaluation, as her pain radiated to the chest and there was a medical history of myocardial infarction. Cardiac pain may radiate to the face and lead patients to seek dental care. In these settings, dentists may contribute to the diagnosis of ischemic heart disease and refer patients for cardiological evaluation.

INTRODUCTION

Referred pain to the face or teeth is recognised as a possible symptom of heart disease.¹ Anginal pain usually occurs during exertion and is frequently perceived at the precordium or retro-sternal area. Pain can be accompanied by diaphoresis and may radiate to the shoulder, left arm and epigastrium.² In about one-fifth (18%) of cases, cardiac pain can be localised in the jaw and teeth.³

When facial pain is recognised as a possible sign of heart disease, clinicians have an important role as diagnosticians. Several reports demonstrate that an improper diagnosis leads to unnecessary dental treatment.^{4,5} The purpose of this report is to present a well-documented case in which facial pain caused by

ischemic heart disease was the chief and only pain complaint of the patient.

CASE REPORT

A 65-year-old woman complained of excruciating facial pain of one-minute duration for three months. The pain was first perceived in both zygomas and radiated down to the jaw and neck, and was precipitated by mandibular movement such as opening the mouth as well as by walking and climbing stairs. Occasionally pain occurred at night during sleep. The pain was disturbing to the point that on two occasions she sought treatment in hospital emergency departments. On both occasions there was no subsequent progress in aetiological evaluation. During the last emergency department evaluation two days prior, in addition to the facial pain, she also complained of nausea, diaphoresis, vomiting and was eventually referred to a dental clinic for evaluation of a suspected temporomandibular disorder.

Her medical history included thyroidec-tomy (1983) and myocardial infarction (1993). Coronary angiography after the infarction (Fig. 1a) and six years later (Fig. 1b) revealed occlusion of the right coronary artery. The oral examination revealed

an edentulous patient with complete dentures, and without mucosal lesions. The maximum mandibular opening was 48 mm; there were neither masseter nor pterygoid muscle abnormalities. Temporomandibular joints were also normal. The panoramic radiographs revealed no bone abnormalities (Fig. 2). During the examination the patient was able to recall that the symptoms two days earlier were similar to those at the time of myocardial infarction. She was then referred for cardiological evaluation.

The physical examination revealed regular pulse, 60 beats per minute and blood pressure 140/80 mm Hg. The rest of the physical examination was unrevealing. The electrocardiogram revealed sinus rhythm, heart rate 45 beats per minute and negative ST-T segment in leads II, III and aVF and flattening of ST-T segment in leads V₅ and V₆. On echocardiography inferior wall hypokinesia was detected; the Doppler study revealed mild mitral valve regurgitation. During the evaluation, at rest in the waiting room she also felt pain in the chest as well as in the arms. The diagnosis of unstable angina was made and medical treatment was administered with propranolol, isosorbide dinitrate and

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Refereed Paper

Received 21.9.04; Accepted 28.1.05
doi: 10.1038/sj.bdj.4812380

© British Dental Journal 2005; 198: 679–680

Fig. 1 Coronary angiography in the left anterior oblique view after the infarction in 1993 (a) and six years later (b) demonstrating occlusion of the right coronary artery (arrows)

Fig. 2 Radiographs revealed no bone abnormalities

aspirin. Medical therapy was successful and the patient was discharged and was free of angina after nine months.

DISCUSSION

Facial pain was the chief complaint of the patient and she was referred to a dental office for evaluation. She was eventually diagnosed with cardiac angina pectoris due

to ischemic heart disease. The diagnosis of cardiac pain was considered as a possibility due to the lack of local sources for pain: she had an edentulous upper and lower jaw, there were neither muscle abnormalities nor temporomandibular joint disorder and the radiographs were normal. In addition, her pain radiated to the cervical area, in contrast with the common referral pattern

of cardiac pain from chest to jaw or face. The temporal association between physical exertion and pain might have led to the diagnosis of angina pectoris, a highly prevalent condition and thus ranked among the leading causes of pain considered in the diagnosis of orofacial pain.¹

Cardiac pain may occur first in the teeth and in the jaw due to connections between thoracic and cervical dermatomes (from C₂ to T₁ roots)^{4,6} and due to connections between cervical dermatomes and the trigeminal nerve. Indeed, there are reports of patients who were subjected to dental extractions for treatment of facial pain but eventually diagnosed with angina due to ischaemic heart disease.⁴ In addition, patients who have suffered myocardial infarction may not recognise their pain as due to angina.² Thus, patients with facial pain associated with pain in the chest may occasionally be seen first by the dentist,^{7,8} only to find later that their pain complaints were caused by coronary artery disease.

1. Mansur A J, Curiati J A, de Almeida A O, Genari Filho A, Barreto A C, Ramires J A, Bellotti G, Pileggi F. Infarto agudo do miocárdio. Comparação entre fatores que influem no tempo decorrido entre o início da dor e a hospitalização, em São Paulo e Jundiaí. *Arq Bras Cardiol* 1983; **41**: 181-184.
2. Begin A, Emdin M, Mazzei M G, Baroni M, Accarino M. Clinical characteristics of anginal pain in man. *Funct Neurol* 1989; **4**: 43-45.
3. Edmonstone W M. Cardiac chest pain: Does body language help the diagnosis? *Br Med J* 1995; **311**: 23-30.
4. Kreiner M, Okeson J P. Toothache of cardiac origin. *J Orofac Pain* 1999; **13**: 201-207.
5. Wall P D, Melzack R. (Eds) *Textbook of pain*. Edinburgh: Churchill Livingstone, 1989.
6. Tzukert A, Hasin Y, Sharav Y. Orofacial pain of cardiac origin. *Oral Surg Oral Med Oral Pathol* 1981; **51**(5): 484-486.
7. Bonica J J. *The management of pain with special emphasis on the use of analgesic blocks in the diagnosis, prognosis and therapy*. Philadelphia: Lea & Febiger, 1953.
8. Drinnan A J. Differential diagnosis of orofacial pain. *Dent Clin North Am* 1987; **31**: 627-643.