Characteristics of patients with chronic idiopathic orofacial pain

A retrospective study

Madeleine Allerbring and Glenn Haegerstam

Departments of Endodontics and Oral Diagnosis, Karolinska Institute, School of Dentistry, Huddinge University Hospital, Huddinge, Sweden

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Chronic orofacial pain without obvious pathologic findings is not uncommon and is a diagnostic problem. It is uncertain whether this type of pain is different from other chronic idiopathic pain conditions. Fifty-five patients referred to the Facial Pain Diagnostic Group at The Karolinska Institute, School of Dentistry at Huddinge University Hospital, Stockholm, were investigated retrospectively. There were 49 women and 6 men, ranging in age from 30 to 81 years, all with orofacial pain of more than 6 months' duration, which the patients considered to be of dental or paradental origin. Despite dental treatment aimed to relieve the pain, no *permanent* relief was observed. The results suggest that chronic idiopathic orofacial pain resembles other chronic idiopathic pain, and adequate diagnosis and treatment require not only dental but also medical competence. □ *Facial pain; intractable pain; pain measurement*

Glenn Haegerstam, M.D., Medical Department, Astra Läkemedel AB, S-151 85 Södertälje, Sweden

A condition of facial pain without known abnormality, idiopathic periodontalgia, was described by Harris (1) in 1974. Because idiopathic periodontalgia is localized to the teeth and clinically closely resembles atypical facial pain, Rees & Harris (2) called this condition atypical odontalgia. In modern taxonomy (3) this condition is described as 'tooth pain not associated with lesions' and is characterized as a musculoskeletal condition in which no obvious pathologic changes can be found. The dominant symptom of this pain condition, which can be called chronic idiopathic orofacial pain (CIOP), is discomfort arising from the teeth or the supporting structures. Previous studies have indicated that these patients may develop an illness behavior pattern, reinforced by every treatment failure (4, 5). Early recognition is therefore most important.

An important question is whether this condition is a unique type of chronic pain or if there are similarities to other chronic pain conditions.

The purpose of this study was to compare the symptoms in patients with CIOP with those of other chronic pain syndromes as far as these are described in the literature.

Materials and methods

The subjects were 55 patients seeking consultation and care at the Facial Pain Diagnostic Group at The Karolinska Institute, School of Dentistry at Huddinge University Hospital, Stockholm, because of orofacial

Table 1. Patient characteristics

Age (years)	Women (*n*)	Men (*n*)
<31	1	
31–39	11	1
40–49	8	1
50–59	14	2
>60	15	2

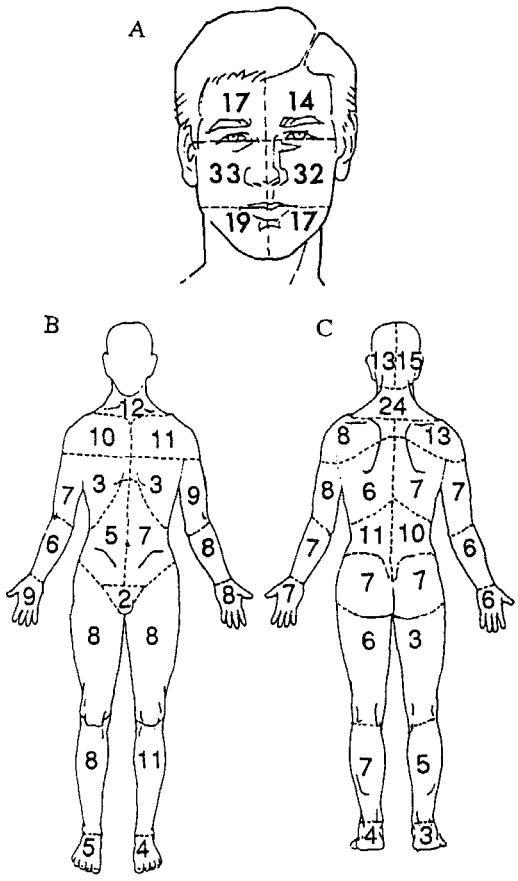

Fig. 1. Frequency and distribution of pain in the face (A) and the rest of the body (B and C). The face is divided into 6 areas, and the rest of the body into 45 areas. The numbers in the areas indicate the frequency of pain distribution.

pain. All the patients had undergone thorough investigation and any necessary treatment by dental clinicians at the different departments at the School of Dentistry. When pain persisted, the patients were evaluated by the Facial Pain Diagnostic Group. They were selected by studying the records of all 61 patients referred to the group between 1981 and 1987. One subject was excluded because of language difficulties, and five other patients were excluded because their facial pain had been successfully treated by dental intervention. The patient records of the remaining 55 patients, 49 women and 6 men, ranging in age from 30 to 81 years (Table 1), were studied retrospectively.

The patients had completed a set of questionnaires on various aspects of their pain, and they had indicated the location of the facial pain in more detail on outlines of the face. The facial diagram was divided into six areas (Fig. 1A). The pain distribution in the rest of the body was assessed by means of a pain diagram (Fig. 1B and C) which included full body outlines (front and back). The figures were divided into 45 anatomic areas in accordance with Margolis et al. (6).

The magnitude of pain intensity (Fig. 2) was assessed by means of a questionnaire containing nine sensory verbal descriptors (7). A questionnaire (Table 2) containing 29 expressions characterizing dental pain (8) had been used to assess the nature of the pain. The onset, duration, and temporal pat-

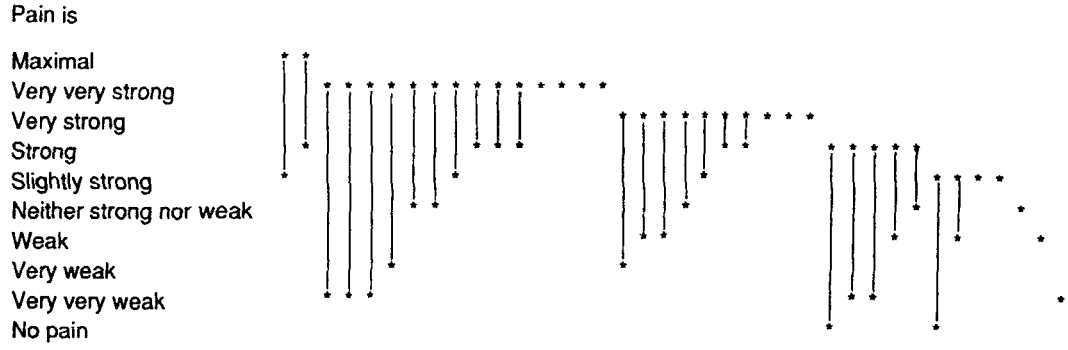

Fig. 2. Individual variation of pain intensity. The stars connected by a line indicate the span between maximal and minimum pain in the same subject. A single star indicates constant pain intensity.

Table 2. List of qualitative expressions used by the patients to describe dental pain (8). Bold numbers indicate frequencies of used terms

Trobbing (*bultande*) (**9**)	Dull pain (*dov smärta*) (**12**)
Quivering (*dallrande*) (**0**)	Sharp pain (*skarp smärta*) (**11**)
Pounding (*dunkande*) (**15**)	Shooting pain (*ilning*) (**7**)
Pulsing (*pulserande*) (**8**)	Itching (*kliande*) (**2**)
Vibrating (*vibrerande*) (**3**)	Smarting (*svidande*) (**8**)
Aching (*molande*) (**24**)	Tooth-ache (*tandvärk*) (**10**)
Pricking (*stickande*) (**9**)	Burning (*brännande*) (**7**)
Dental burr-drill (*tandläkarborr*) (**2**)	Hot (*varmt*) (**7**)
Splitting (*blixtrande*) (**4**)	Biting cool (*isande*) (**2**)
Penetrating (*genomträngande*) (**9**)	Cold (*kallt*) (**4**)
Bursting (*sprängande*) (**14**)	Slightly aching (*malande*) (**8**)
Radiating (*strålande*) (**10**)	Feeling of pressure (*tryckande*) (**14**)
Stinging (*bitande*) (**0**)	Pulling feeling (*som ett drag*) (**1**)
Attack of cramp (*som kramp*) (**5**)	Swelling pulp (*svällande pulpa*) (**6**)
Pinching (*nypande*) (**1**)	

tern of the pain were obtained from the patient records. The history reported in the records, including disturbances such as difficulty in getting to sleep, subjective anxiety, treatment of depression, and occurrence of headache, was also recorded.

Results

Common features

Two prominent features were present in all cases: 1) pain, originating in one or more teeth or surrounding tissues, of more than 6 months' duration, and not attributable to any odontologic defect, and 2) dental intervention not resulting in any *permanent* relief of symptoms.

The patients reported a duration of suffering ranging from 0.5 to 35 years (Table 3). Forty-nine of the patients (89%) were women; of these, 28 (57%) were 50 years of age or more.

Cause of pain

In 28 patients (60% of the 50 patients who responded to this part of the questionnaire) the onset of the pain was reported by the patients to be related to dental therapy. Eleven patients reported that their pain started in relation to other events (Table 4). In two patients, the pain started as toothache, but nine patients could not suggest a correlation between any particular event and the onset of symptoms. Five patients did not answer this question.

Pain distribution

Forty-nine of the 55 patients filled in the pain diagram (Fig. 1A). The pain was frequently located in or originated from the maxilla. Twelve patients reported pain in one area. The remaining 37 patients reported pain in more than 1 area (Table 5), and in

Table 3. Pain duration

Duration, years	No.*
<1	1
1	1
2	8
3	9
4	6
5	6
6	5
7	4
8	1
9	0
10	3
>10	9

* Two patients did not respond to the question.

Table 4. Events related to pain onset

Dental therapy	28
Toothache	2
Traffic accident	2
Heavy work	1
Headache since childhood	1
Earache	1
Eyeache	1
Illness	2
Relocation	1
Accidental trauma to the maxillary region	1
Exposure to cold	1
No association with any particular event	9
Total	50

26 patients the pain was distributed to both sides of the face at the same time, thus crossing the saggital midline. There was no difference in frequency of pain distribution between the two sides.

The frequency of pain distribution outside the face is indicated in Fig. 1B and C. Thirty-five (71%) of the 49 patients who filled in the pain diagram reported the pain to be located outside the face. The extrafacial pain was homogeneously distributed all over the body, with a slightly higher frequency in the back of the neck.

Characterization of pain

Thirty-one patients in this study (67%) reported continuous pain, 16 (35%) reported intermittent pain, and 8 did not respond to these questions. The questionnaire used for assessment of the pain intensity was answered by 42 of the 55 patients. The descriptors 'maximal' and 'very very strong' were used by 2 and 14 patients, respectively. Only seven patients reported a pain intensity below 'strong'. The individual variations in pain intensity are shown in Fig. 2. The descriptors used for the assessment of quality of pain are listed in Table 2. The terms 'aching' (Swedish: *molande*) or 'bursting' (Swedish: *sprängande*), or both together, were used by 31 (76%) of the 41 who responded to the questionnaire. Only seven patients described their pain as 'throbbing' (Swedish: *bultande*).

Table 5. Pain distribution in the face

No. of pain zones in face	No. of patients	No. of patients with pain crossing midline
1	12	0
2	16	5
3	4	4
4	12	12
5	3	3
6	2	2

Associated symptoms

Occasional headache was reported by 27 (49%) patients. Twenty-nine (53%) of the 55 patients reported medical treatment of a previous or current history of depressive illness or its symptoms or admitted to emotional stress due to family or social circumstances.

The sleep pattern was reported to be disturbed in 26 (50%) of the 52 patients who reported their sleep pattern. In the group of patients with sleep disturbances the pain was distributed to areas outside the face in 92% of the cases. The corresponding figures for those patients who did not report sleep disturbances was 65%.

Discussion

The symptoms reported by the patients in this study are in accordance with earlier investigations of chronic orofacial pain (1–5, 9–16).

The strong predominance of women is characteristic of chronic pain populations (3), indicating sex-related predisposing factors for CIOP and for other types of chronic pain.

In most chronic pain populations the distribution of pain is described as diffusely spread over large body areas (16). In the present study more than 70% of the patients reported pain outside the face. In some cases the pain occupied a large part of the body, frequently also crossing the sagittal midline. In none of the patients could any correlation between pattern of innervation and pain distribution be discerned. This is a common

finding in patients with chronic, idiopathic pain (17).

Most of the patients in this study reported continuous pain. This is also a common finding in other chronic pain conditions: in psychologically related chronic pain such as muscle tension pain and tension headache, the pain is frequently reported to be continuous (3). In the myofascial syndromes and chronic mechanical low-back pain the pain is also continuous in most cases (3).

Because the symptoms *mimic* pulpal and periodontal pathologic conditions patients often undergo endodontic therapy or surgery. This may give temporary relief (18). The pain recurs after every therapeutic effort, and patients are frequently subjected to multiple invasive attempts at treatment. In this respect there is a further similarity to chronic idiopathic pain in general.

A large number (50%) of the patients in this study reported occasional headache. About the same percentage reported sleep disturbances. In a study of patients with fibromyalgia the frequency of headache and sleep disturbances was 54.3% and 75.6%, respectively (19). Thus, these symptoms are also common in patients with chronic idiopathic pain. The finding that practically all subjects in this study with sleep disturbances reported pain outside the face suggests further similarity to those with fibromyalgia. More than 50% of the patients in the present study had a history of depression or other psychiatric events. An association between pain and psychiatric disturbance is frequent in all types of chronic pain (20).

An obvious difference between other types of chronic idiopathic pain conditions and the type of pain investigated in this paper is the real or suspected association with the dentition. The intense publicity in Scandinavian daily papers surrounding the alleged toxic effect of mercury leakage from amalgam may be decisive for some patients' tendency to consider the problem to be dental in origin. Furthermore, a large proportion of the patients reported that their pain problems started after invasive dental therapy. The possibility that such events trigger off reactions to latent psychosocial problems can not be excluded. Still another possibility is that acute dental pain may trigger somatic distant pain syndromes. Even if, although unlikely, the origin of the patient's total pain is odontogenic, the final condition must be regarded not only as odontogenic but also as medical. There is a clear indication for comprehensive pain evaluation in these patients. The quantitative, qualitative, temporal, and spatial aspects of the pain must be investigated. As the origin of the pain may be psychosocial, even psychologic and environmental factors should be considered.

The features of CIOP seem to resemble those of chronic idiopathic pain in other regions. It is therefore proposed that CIOP is a subgroup of chronic idiopatic pain conditions.

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