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Manuscript title

Why does Patient Mental Health Matter? Part 5: Chronic orofacial pain as a consequence of psychiatric disorders

Abstract:

This is the final paper in a series looking at psychiatric presentations in dentistry. Since publishing the first paper, the oral health of people with severe mental illness (SMI) has gained significant media attention with the Office of the Chief Dental Officer for England publishing a statement on the importance of prioritising oral health of people with SMI.[1] Members of our group (VA and DS) have also been involved in a consensus statement[2] that sets out a five-year plan to improve oral health in people with SMI. In the previous paper we discussed how a psychiatric disorder can result in dental pathology by contributing to risk factors associated with tooth surface loss. This paper will explore chronic orofacial pain symptoms and their link with psychiatry, considering the role of the primary dental care team in early recognition of psychiatric disorders. Given the range of chronic orofacial pain subtypes, we will present two separate fictionalised case-based discussions to explore their presentation.

Clinical Relevance Statement: This paper emphasises the role of the primary care dental team in recognition of psychiatric conditions and their involvement in chronic orofacial pain.

Objectives Statement: To provide the reader with a better understanding of links between psychiatry and dentistry using fictionalised case-based discussion.

Body of Manuscript

Introduction

One in five presentations to primary care involve medically unexplained symptoms (MUS) or persistent physical pain.[3] Of those affected, half live with anxiety or depression, positioning these conditions as either a consequence of the persistent pain or as part of the aetiology. There is a strong relationship between anxiety, depression, somatic symptom disorders and substantial social or physical impairment.[4]

Somatic symptoms are physical symptoms that arise due to emotional or psychological factors. Anyone experiencing anxiety, depression or distress can somatise physical symptoms, but there are also specific somatisation disorders (e.g. bodily distress disorder) marked by the presence of MUS.[4] Research has indicated that somatisation disorders may have a prevalence of between 16.1 to 21.9% in general practice. This poses challenges for those in primary care when physical symptoms (including chronic primary pain) present without underlying organic pathology and are instead related to psychosocial factors.[5]

Somatic symptoms can be reported as a dominant feature or as a component of other psychiatric conditions. In affective disorders like depression, somatic symptoms are more likely to present during an episode and are unlikely to persist once one has passed.[4] In anxiety disorders, somatised symptoms are less likely to persist following medical assessment and reassurance compared to bodily distress disorder.[4] Anxiety, depression and body distress disorder can form comorbid presentations responsible for somatised symptoms.

In dentistry, around 7% of the population report symptoms of chronic orofacial pain (COFP)[6], which includes persistent idiopathic orofacial pain and chronic temporomandibular joint dysfunction (TMD).[4]

Case 1: Persistent Idiopathic Orofacial Pain

A 56-year-old woman presents to you as a new patient. She reports that over the last ten years she has been experiencing severe episodes of pain affecting the right side of her face. The pain is sharp and lancinating but can be throbbing, heavy and aching. She feels this pain inside the mouth 'near the top right' but says it can radiate across the whole right-hand side of her face. Nothing alleviates the pain, but it can worsen later in the day, with no other obvious pattern.

Over the years, this pain has resulted in many teeth being removed, multiple surgical explorations of the area, various injections and drug therapies. Some of these have had limited success for brief periods of time. She has seen many specialists and has had numerous scans and radiographs, with no one providing a diagnosis. She has a medical history of gastric ulcers and a previous thyroidectomy and hysterectomy. Her medications include diazepam, ranitidine, and levothyroxine. She has been married for 33 years and has

two adult children. She does not work and does not smoke cigarettes but consumes 4 units of alcohol per week.

On examination, she wears an upper complete denture and is partially dentate on her lower arch. She does not wear her lower denture as it is 'too painful'. When you ask her to point to the area that causes her chronic pain she identifies the upper right alveolar ridge and buccal mucosa in the area of previously extracted canines and premolars.

What are our initial thoughts?

Several features of the clinical scenario raise concerns about the patient experiencing a somatoform disorder, such as bodily distress disorder (Figure 1).

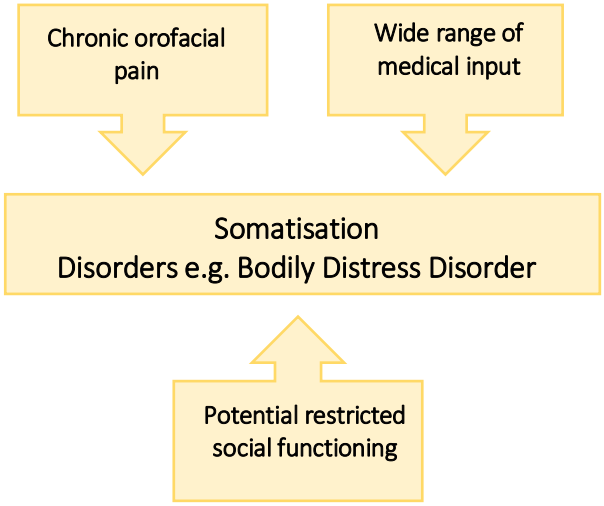

Figure 1: The factors that indicate a somatisation disorder may play a role in the clinical picture

This somatisation of physical symptoms appears to be in the form of persistent idiopathic facial pain and we should consider this in overall patient management.

Could a somatisation disorder (such as bodily distress disorder) play a role in this clinical picture?

Bodily distress disorder has a frequency of 17% within primary care services and is common amongst men and women between the ages of 41-65.[7] Patients with bodily distress disorder have self-reported chronic physical illness, often resulting in higher use of all types of medical services.[7] The patient has had a history of high utilisation of medical services, with repeat interventions and scans for persistent pain. She is also in the most common age range for a presentation of bodily distress disorder, so the possibility somatisation is involved in her case is high. The relationship between bodily distress disorder and the patients' case is explored further in Table 1.

ICD-11 Diagnostic Requirements for Bodily Distress Disorder	How does this relate to the clinical picture?
Bodily symptoms that are distressing to the individual.	Often the focus is limited to a single symptom e.g. pain or fatigue. In the patient's case distress has been caused by the chronic facial pain she experiences.
Symptoms receive excessive attention and are persistent. This is in spite of appropriate investigation and reassurance from healthcare professionals.	The patient reports multiple specialists and interventions over the years including dental extractions, surgical explorations, injections and drug therapies with limited success.
Bodily symptoms are persistent e.g. present on most days over a period of over 3 months.	The facial pain described is chronic and experienced daily.
The symptoms, distress and pre-occupation result in significant functional impairment.	Functionally, the patient is unable to wear her lower denture due to the pain. She is also out of work, although the relationship between this and her facial pain is unclear.
The symptoms, distress and pre-occupation cannot be better accounted for by another psychiatric condition	There is no clear background of psychiatric issues, although the diazepam and gastric ulcers may indicate stress.

Table 1: How a bodily distress disorder may relate to the patients' presentation, adapted from ICD-11[4]

When exploring this diagnostically it is useful to collect a thorough pain history, including: 'onset, frequency, duration, characteristics of the pain, provoking factors, site of initiation of pain, exacerbating factors, relieving factors, severity and associated features'.[8] We should also discuss what the patient perceives the origin of the pain to be and the success and nature of any previously attempted management strategies.[8]

The patient is experiencing a constant, aching, long-lasting pain with no exacerbating or relieving factors which radiates around the right face and head. No clinical or radiological signs indicate an underlying dental cause, although the potential for denture related trauma and poorly fitting dentures should be investigated and not dismissed. All previous management attempts have failed and there may be co-morbid stress due to medical and lifestyle factors.

The most likely diagnosis would be persistent idiopathic facial pain (PIFP), previously known as atypical facial pain,[8] which could originate from a somatisation disorder. Patients who have bodily distress disorder often have high rates of comorbid anxiety and depression;[7]

highlighting the relationship between somatisation and these conditions. In our next case we will consider the somatic symptoms of anxiety and depression.[7]

Case 2: Temporomandibular joint dysfunction

You have a 21-year-old male patient with a medical history of anxiety, depression, irritable bowel syndrome and chronic fatigue syndrome for which he takes diazepam, sertraline and mebeverine. Over the last two years he has experienced pain and clicking near his ears that radiates to his lower jaw and can cause headaches. He describes the pain as throbbing, heavy and aching. The pain has worsened recently and is constant with very painful episodes intermittently. Exacerbating factors including 'chewing, talking for long periods or opening wide' and he reports that his symptoms feel worse in the morning.

He has recently finished his degree in journalism and has started a high-profile stressful job. He smokes 20 cigarettes a day and drinks 16 units of alcohol a week. He reveals that stress can provoke the pain and has been using soft foods, heat pads and massaging the area to relieve symptoms.

On examination, there is palpable tenderness in the pre-auricular region, and on mouth opening. This tenderness extends to the muscles of mastication, trapezius and sternocleidomastoid. There is 40mm of inter-incisal mouth opening with an audible click.

What are our initial thoughts?

In this scenario the patient is experiencing COFP in the form of temporomandibular joint dysfunction with a background of anxiety, depression and work associated stress (Figure 2).

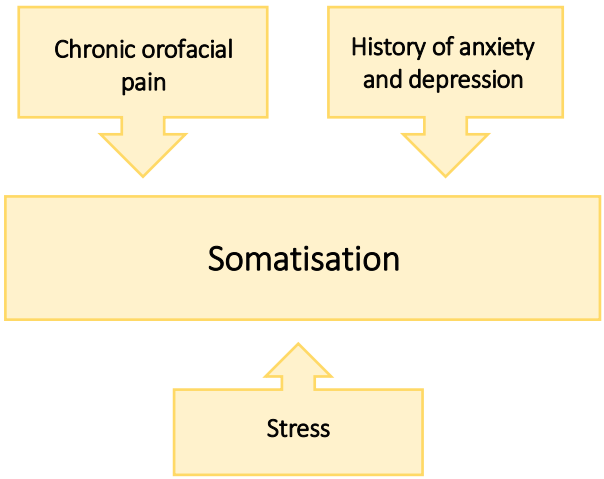

Figure 2: The features of the scenario and how they may result in a presentation of somatised symptoms

Somatic symptoms can exist as an extension of other psychiatric conditions such as depression and anxiety.[5] Given the patients' medical history this element of the presentation should be considered.

What could be the cause of his COFP?

A vast majority of patients with COFP initially present to their General Medical Practitioner.[9] In a case of TMD-related COFP this can result in misdiagnoses such as otalgia[10,11,12] due to the close proximity of the temporomandibular joints to the ear. Similarly, TMD pain can be mistaken as toothache by dentists and there are numerous differential diagnoses that may be relevant in a case of TMD-associated pain (Table 3).

Systemic origin	Differential Diagnosis
Dental	• Caries • Third molar eruption
Ear conditions	• Otitis externa/media • Mastoiditis • Eustachian tube dysfunction
Headache disorders	• Migraines • Cluster headaches
Neuralgias and neuropathic pain disorders	• Trigeminal or facial neuralgias • Post-herpetic neuralgia • Post-traumatic/surgical neuralgias
Viral infections	• Mumps • Shingles
Autoimmune disorders	• Rheumatoid arthritis • Systemic lupus erythematosus • Sjögren's syndrome
Disorders of other facial structures	• Parotitis • Salivary gland disorders • Maxillary sinusitis • Giant cell arteritis • Osteonecrosis

Table 2: Temporomandibular joint disorder differential diagnoses adapted from NICE Clinical Knowledge Summary on Temporomandibular Disorders.[13]

Patients presenting similarly to Case 2 should have their temporomandibular joints assessed and managed according to the Diagnostic Criteria for TMD.[14] A brief TMD checklist is shown in Figure 3, with an accompanying referenced video[15] to help clinicians make this assessment. It outlines a systematic approach to assessing and diagnosing patients with TMD. Such a checklist can be implemented throughout primary care, to minimise the potential for misdiagnosis of TMD as non-specific otalgia which ultimately results in mismanagement.

***Masticatory System Examination**

Please circle Yes / No where applicable

Temporomandibular Joint							
Tenderness on palpation	Lateral pole	Right	[1]Yes	[0]No	Left	[1]Yes	[0]No
Joint noises	Clicks	Right	[1]Yes	[0]No	Pain	[1]Yes	[0]No
		Left	[1]Yes	[0]No	Pain	[1]Yes	[0]No
	Crepitus	Right	[1]Yes	[0]No	Pain	[1]Yes	[0]No
		Left	[1]Yes	[0]No	Pain	[1]Yes	[0]No
Range of motion (mm)		Pain free opening .....mm			**If this is less than 15mm, complete TRISMUS CHECKLIST below**		
	Maximum *unassisted* opening .....mm		Pain [1]Yes [0]No				
	Deviation on opening		Right Left		Sustained / Transient Sustained / Transient		

Muscle tenderness		
Temporalis	Right [1]Yes [0]No	Left [1]Yes [0]No
Masseter	Right [1]Yes [0]No	Left [1]Yes [0]No
Lateral pterygoid	Right [1]Yes [0]No	Left [1]Yes [0]No
Optional: trapezius	Right [1]Yes [0]No	Left [1]Yes [0]No
Optional: sternomastoid	Right [1]Yes [0]No	Left [1]Yes [0]No

TRISMUS CHECKLIST	[1]Yes	[0]No
Opening less than 15mm and progressively worsening		
Absence of a history of clicking		
Pain of non-myogenic origin (e.g. neuralgia)		
Swollen lymph glands		
Suspicious intra-oral soft tissue lesion		

If any of the answers are yes: refer to OMFS for urgent assessment

Figure 3: The masticatory system examination, adapted from 'Temporomandibular disorders, trismus and malignancy'.[16]

For this patient, the clinical features suggest a likely diagnosis of an internal derangement (disc displacement with reduction), and myofascial pain, given the pain radiates beyond the

muscles of mastication. Symptoms of depression and anxiety are known risk factors for chronic temporomandibular disorders[17] and stress can result in clenching and grinding which exacerbate muscle tension and physical symptoms of pain.[18] The patient has a known history of anxiety, depression and currently reports high stress levels so there is significant potential for clenching and grinding as a cause for his myofascial pain.

Chronic orofacial pain: What should I do in such scenarios?

Even if a case of COFP is considered a medically unexplained symptom with roots in somatisation, the pain is still very real and often debilitating. In these cases, it is important to take the patients' pain seriously; treat anything that can be treated and then focus on supportive management and improving functionality.[19] For example, in our first case the patient has complained about difficulties with her dentures alongside her chronic pain – it would be sensible to review the dentures and make adjustments whilst also supporting her with her persistent idiopathic facial pain.

To provide reassurance, we should provide a definitive diagnosis; one of persistent idiopathic facial pain and one of TMD. These should be clearly communicated to the patient using explanation of pain pathways (so-called pain science education) and explanation of mechanisms by which the vicious pain-anxiety-muscle tension cycle is exacerbated. In the case of persistent idiopathic facial pain, the patient should be reassured of the fact that pain can occur in the absence of underlying pathology. Patients can feel unsupported or confused in cases of persistent pain without organic pathology, which can lead to unproductive or extensive investigations. This can be redirected with reassurance and continuous input on how these symptoms can present, deliberately moving away from the misconception that the pain 'is all in the patient's head' which is often how the patient feels.

Supported self-management using a biopsychosocial approach[20,21,22], has been shown to reduce long term pain and depression in patients with COFP. In addition to offering a plausible explanation for symptoms, we can identify the impact the pain has on daily life e.g. restrictions in household activities, work, relationships, personal and social activities. With an awareness of the impact on their quality of life, we can set goals to help break the vicious cycle that exacerbates pain symptoms. With cases of chronic pain vicious cycles often arise from the inter-relationship between the autonomic physical symptoms and the behavioural and cognitive response. This cycle produces negative thoughts about the symptoms which results in avoidance of activities and consequent symptom amplification (illustrated in Figure 4).

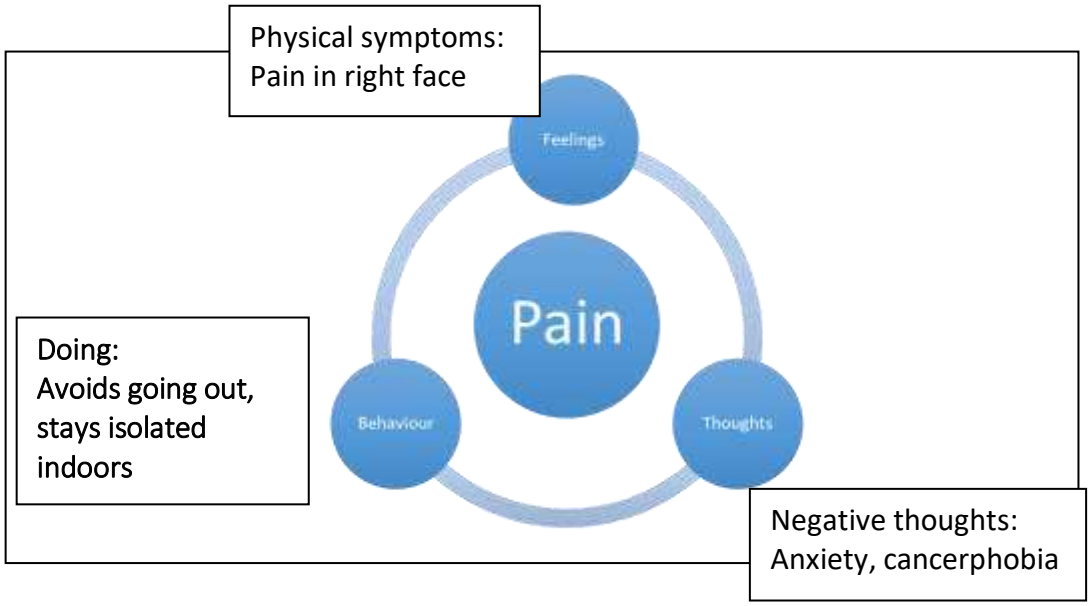

Figure 4: The cycle of anxiety, avoidance and worsening of the pain[22]

Aside from reassurance and explanation, the psychosocial approach focuses on cognitive restructuring and behavioural activation. Here we should challenge negative thoughts about the pain, making a plan to balance routine, necessary and pleasurable activities to prevent pain from becoming the focus. Our actions can be summarised in Table 2.

Our Actions	Goal
Cognitive Restructuring	Restructure the challenging negative thoughts about pain with reassurance and explanation for the symptoms.
Behavioural Activation	Prevent pain from becoming the focus by setting targets for activities that break the vicious cycle of pain-related activity avoidance. Consider the concept of 'living well with pain' by reducing its impact on activities of daily living.
Relapse Prevention	As goals are achieved discuss relapse prevention with the patient and how the nature of chronic pain is episodic and can be exacerbated by stress and anxiety. Relapses are addressed with cognitive restructuring and behavioural action.

Table 3: Our actions to help manage chronic pain presentations[20,22]

In the case of TMD there is chronic myofascial pain that may be exacerbated by his underlying psychiatric conditions and stress. Here we can discuss the exacerbating factors of his medical conditions and stress levels which are resulting in oral parafunctional habits and increased alcohol intake. There should also be a focus on reversing habits that exacerbate symptoms. The patient should be advised on posture control (e.g. sleeping on his back) to limit night time parafunction, heat application, soft diet and massaging his masseter and temporalis muscles.[23] Overall, this can help to reduce muscle tension and myofascial pain.

The effectiveness of splints for TMD is questionable.[24] If we decide to provide a splint there should be regular review to monitor symptoms; if they worsen, splint usage should be stopped. There can also be liaison with the general medical practitioner (GMP) or the patient's psychiatrist (if he is already part of psychiatric services) to determine medical management of stress and limiting alcohol intake.

In the medium term we should monitor pain intensity and the impact on activities of daily living; there may be a need to refer secondary care for multi-disciplinary team management by oral surgery with continued psychiatric input. Onward referral to OMFS or an oral surgery team is indicated if there are any red flag signs and symptoms (Table 4).

Red flag signs and symptoms
Signs of potential malignancy: • Previous history of malignancy • Unexplained fever or weight loss • Persistent or unexplained neck lump • Cervical lymphadenopathy
Recurrent epistaxis, purulent nasal discharge, persistent anosmia, or reduced hearing
Concurrent infection, facial asymmetry, facial mass or swelling, or profound trismus
History of recent head or neck trauma and/or occlusal changes
Persistent and worsening pain including jaw pain in people taking bisphosphonates
Neurological symptoms indicating an intracranial cause or malignancy affecting cranial nerve peripheral branches
New-onset unilateral headache or scalp tenderness, especially if over 50 years of age

Table 4: Temporomandibular joint disorder red flags requiring onward referral. Adapted from NICE Clinical Knowledge Summary on Temporomandibular Disorders.[13]

Those living with chronic pain may express suicidal thoughts or ideations. Up to 50% of patients living with chronic pain have had serious thoughts about committing suicide.[25] As discussed, primary care practitioners will have a continuous relationship with patients living with chronic pain. Any expression of such thoughts should be explored, for example: are they experiencing feelings of hopelessness or significant stressors, do they have any plans to act on these thoughts and whether or not there has been any previous self-harm or suicide attempts. With patient consent, such a conversation would prompt communication with the GMP, psychiatric services or local crisis teams.

When managing cases of COFP we must not lose sight of the three most important steps: make a definitive diagnosis, provide a clear explanation and guide patients through supported self-management.[3] If these steps are taken, many may not require an onward referral.[3]

Declaration

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