

Cognitive behavioural therapy and severe needle phobia – a case study

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Abstract

Aim: To establish the aetiology of severe needle phobia in a 13- year- old patient, investigate its effect and use a range of anxiety management techniques to overcome this, in order to achieve medical and dental treatment.

Method: The patient's history was explored in liaison with the anxiety team at the Maudsley Hospital, South London. Clinical examination was carried out using three steps: establishing the problem, identifying the effect on the patient and rectifying the problem. The latter was achieved through collaboration between the dentist and the patient to undergo cognitive behavioural therapy, to resolve the needle phobia.

Results: The three steps above led to cognitive behavioural therapy which resulted in overcoming the needle phobia.

Conclusions: Cognitive behavioural therapy can be used to support children and adolescents to overcome their fears of needles and injections in order to obtain treatment.

Key words: *Cognitive behavioural therapy, needle phobia, injections, dentistry*

Introduction

The Joint Advisory Committee for Special Care Dentistry (JACSCD) in 2002 defined Special Care Dentistry (SCD) as: 'The improvement of oral health of individuals and groups in society who have a physical, sensory, intellectual, mental, medical, emotional or social impairment or disability or, more often, a combination of a number of these factors (JACSCD, 2003).

In the past ten years, The Department of Community Special Care Dentistry (CSCD) of King's College London Dental Institute, has concentrated its resources on the provision of SCD to patients within the three London inner city Boroughs of Lambeth, Southwark and Lewisham. One group of patients referred to the Department of CSCD, have a phobia of needles. This, in its extreme form, can result in a large number of patients being referred for general anaesthesia (General Dental Council Standards Guidance, 2005), with the attendant risk and trauma to the patient. There is also the organisational

complexity, time and expense involved.

The dental management of severe needle phobia has not been widely reported, with only a few cases available for guidance (Hoyle, 1982; Camner, 1983; Gow, 2003; Majstorovic and Veerkamp, 2004). There is a need to explore anxiety management techniques which directly address the severe needle phobia, to assuage the patient's fears. One of the ways of dealing with severe needle phobia is Cognitive Behavioural Therapy (British Association of Behavioural and Cognitive Psychotherapy).

Part of the treatment includes challenging the anticipation bias, that is, the patient's unrealistic view of what is going to happen. Another part is resolving the cognitive dissonance, defined as the discrepancy between reality and the patient's consolidation of their beliefs and behaviour.

Cognitive Behavioural Therapy is based on the concept that how we think (cognition), feel (emotion and effect) and act (behaviour) are interrelated and all interact. Change in one modality will influence the others (Ellis,

2001). The stages of Cognitive Behavioural Therapy include:

Step 1: Identifying the activating event, that is an event that ultimately leads to some type of high emotional response or negative dysfunctional thinking.

Step 2: Identifying the beliefs or negative thoughts that occur and the consequential emotions such as anxiety, anger or sorrow.

Step 3: Reframing: after the irrational beliefs have been identified, the therapist will work with the patient in challenging the negative thoughts on the basis of evidence from the client's experience, by reframing it to re-interpret it in a more realistic light. This assists with developing more rational beliefs and healthy coping strategies.

This case study describes the use of Cognitive Behavioural Therapy to overcome severe needle phobia in order to achieve dental treatment successfully. Our objectives for this patient were to:

- Establish the aetiology of the severe needle phobia (activating event)
- Investigate the effect of the severe needle phobia on the patient (beliefs and negative thoughts)
- Use a range of anxiety management techniques to overcome the severe needle phobia, in order to achieve medical and dental treatment (reframing).

Methods

A 13-year-old girl was referred to the consultant in SCD by a general dental practitioner (GDP) due to her severe needle phobia. Her medical history was otherwise clear. The patient was a regular attender at her GDP and under orthodontic review to monitor the eruption of her permanent maxillary canine teeth. The patient refused treatment of the upper right first permanent molar by the GDP, as she was very nervous. The patient was seen by the senior clinical dentist/specialist in Paediatric Dentistry. The dentist explored the history and undertook the clinical examination using the three steps as indicated above: (Ellis, 2001).

Step 1: Establish the problem (activating event).

Step 2: Identify the effect (negative beliefs), on the patient.

Step 3: Try to rectify (reframe) the problem.

The dentist, patient and parent made a joint decision in relation to the treatment modality in the clinic. This included a discussion about the various types of treatment such as local analgesia, inhalation sedation and general

anaesthesia (GA). In addition, behavioural techniques were demonstrated such as 'tell show do', needle desensitisation and introduction to the local anaesthetic.

A referral was made to the Anxiety Team at the Maudsley Hospital, South London, for further support. Interviews were set up by the Anxiety Team to establish the reasons for the severe needle phobia, including the use of an anxiety scale. Following this, a plan of how to overcome the severe needle phobia was confirmed by the senior clinician and the Anxiety Team. Evidence was then presented to the patient in the surgery, to confirm that her fears were unfounded. Finally, treatment was organised in a dental clinic.

Results

The outcome of the history and clinical examination of the 13 year old patient revealed:

Step 1: Establishing the problem (activating event)

The patient required the restoration of the upper right first permanent molar. She had refused treatment because she was very nervous of the dental injection. The dentition was caries-free, apart from the upper right first permanent molar, which was hypoplastic and cavitated. The second permanent molars were already erupted. Oral hygiene was good and diet well controlled. The activating event was the thought of the injection. The fear stemmed from the impact of physical restraint to obtain invasive medical tests, including blood tests, at seven years of age, during an emergency hospital admission (The General Medical Council, 1998; Morris, 2004).

Step 2: Identifying the effects (negative beliefs) on the patient

The patient and her mother were asked what effect the needle had on her. At this stage the patient said that she thought the needle would hurt her. Consequential emotional and physiological responses of the patient revealed the main emotion being fear, leading to anxiety. The patient became tearful, flushed and tried to avoid the situation. With the parent's permission, the psychologist involved with her case cross referenced what was said, to verify, clarify and confirm the information.

Step 3: Rectifying (reframing) the problem

The senior clinician, patient and parent agreed to tackle the treatment without recourse to a general anaesthetic. The behavioural techniques included:

- Tell- show- do, to demonstrate the dental instruments, drills, topical anaesthetic paste and the concept of dental injections, to assure the patient that a pain free injection was possible
- Hand signals to stop the treatment, to give control to

the patient

- Inhalation sedation, as the above alone, were not successful
- Acceptance of failure of patient compliance and appropriate counselling.

It proved impossible to administer the local anaesthetic. The patient's fear was characterised by extreme distress and refusal at the last minute, just before the injection, despite her determination to proceed. The patient and parent were counselled regarding the remaining treatment options. The interviews set up by the Anxiety Team, to investigate the severe needle phobia, resulted in the following four visits:

Out of the dental surgery:

Visit 1: The Anxiety Team from the Maudsley Hospital used an open interview technique to let the adolescent tell her story.

Visits 2-4: The Anxiety Team then used very specific parameters including needle size, degree of pain and what can go wrong with an injection, to quantify the fear about dental injections. This involved three visits, each lasting one hour, over two months.

The Anxiety Team confirmed that the patient had a severe needle phobia, triggered by being physically strapped down to get blood tests done at seven years of age and the fear had magnified with time. The fear had also precluded the use of vaccinations.

The specific fears about dental injections were multiple and more complex than the patient had originally described, as she was uncomfortable discussing it in the dental setting. The fears were:

- The needle would be big and it would hurt
- The needle would break
- The injection would hurt for more than a day and feel awful
- The needle would go in the wrong place.

The Anxiety Team and the senior clinician decided that imagined and in vivo exposures in the dental surgery were essential:

In the dental surgery:

Visit 5: The dental fears were addressed directly to the Dental Team to answer verbally and provide visual evidence to confirm the reality of dental injections.

Visit 6: Provide the dental treatment with local anaesthesia. The clinical psychologist attended all of the appointments.

Evidence presented to the patient that her fears were unfounded:

- The syringe, cartridge and needle were shown to the patient intact and as separate components. The needle tip was exposed. The patient was shown how small, fine and strong the needle tip was. The patient

was reassured because she thought that the whole syringe went into her, rather than just 1-2mm of the needle tip.

- Needle breakage in the mouth is extremely rare. The patient and the Dental Team furiously attempted to jiggle and twist and bend the needle in an orange in order to break it, but the needle remained intact. This was incredibly reassuring, as needle breakage was the patient's biggest fear.
- The Dental Team explained that it does not hurt after the injection, simply because the local anaesthetic solution numbed the tooth and cheek area.
- The topical anaesthetic gel is very strong and can anaesthetise the soft tissues quite profoundly, for several minutes and certainly long enough to give a pain-free dental injection. All the dental team tried the topical anaesthetic paste [20% xylocaine gel] and felt so numb that they couldn't talk for a few minutes. At this point everyone started to laugh.
- As the injection is given there can be a sensation of 'pins and needles' which very quickly goes numb. Some children describe it as a bubble next to the tooth. The cheek then feels numb and 'wakes up' after about one and a half hours.
- "The injection is given as an infiltration, so it can't go in the wrong place. Nothing is going to happen." The patient was reassured that she will not get seriously ill and need more and more needles.
- Dental treatment is successfully carried out.

The treatment appointment

The patient was a little nervous, on arrival. Visualisation was used to administer the local anaesthetic. The patient enjoyed swimming in the sea, so the Dental Team described snorkelling in an aqua-blue tropical sea, with colourful fish, turtles and fire coral. The patient accepted the local anaesthetic needle well and was relaxed, with no unexpected movements. The treatment was carried out expediently, the only complaint being about the slight 'bumpiness' of the slow drill.

Discussion

This case report describes the steps taken to provide clinical dental care for a 13-year-old girl who was a severe needle phobic. It is important to support children and adolescents in overcoming their fears and to become confident and able to cope with needles and injections. This undertaking requires a well-trained dental team experienced in a range of patient management techniques. A wider multi-disciplinary team approach, using all available resources, procured a successful outcome for the patient. The patient became compliant and overcame a significant fear thus avoiding treatment under general anaesthesia (GA).

Cognitive Behavioural Therapy (CBT) opened up the possibility of on-going general health care. CBT involved a mixture of psycho-education, information gathering, imagined and in vivo exposure as well as discussions at the dental practice. The equipment was demonstrated, the sensations explained and the patient's questions directly addressed. Throughout treatment, the patient's fears about the dangers and pain associated with injections were assuaged and her anxiety reduced. The patient was able to have the injection for dental treatment and did not anticipate any further problems with injections.

The procedure was expensive due to the time involved in securing a successful outcome. This was off-set by the use of the external resource of the Anxiety Team and the avoidance of the use of the facility of GA with all of its potential risks as well as costs. The patient has had further treatment since the first successful episode of conservation under local anaesthesia, including dental extractions. The psychological benefits and confidence in accepting injections will provide life long benefits to the adolescent in terms of medical issues, for example, vaccinations and blood tests and dental treatment.

A clinical pathway for patient care could be created to use CBT to avoid recourse to GA in dental phobia referrals, in order to reduce anaesthetic morbidity and mortality (Cohen *et al.*, 1990; Department of Health, 2000). A health care worker complementary to dentistry could be trained for this purpose and work on a site away from the dental surgery environment. This would work in the patient's best interests, as they would be encouraged to disclose their dental fears in a non-threatening environment by an independent person not administering the injection or the treatment. Without this vital information it is not possible to fully resolve the phobia. This format could be extended to benefit phobic adults. The positive outcomes can also benefit patients when they are in need of blood tests or other non-dental procedures necessitating the use of needles. In training such a health care worker, it is important to emphasise the need to consider the NICE standards for psychological therapies (Agenda for change Level 4 or 5). This level of training will protect the public and ensure reasonable levels of treatment success.

An audit of general anaesthetics, including repeat episodes, for dental phobics could be used as a management tool to secure funding to expand supportive psychological services in order to reduce the number of general anaesthetics needed. An alternative approach would be for the Department of Community Special Care Dentistry to offer training to Dentists with Special Interests within Primary Care Trusts (Department of Health and Faculty of General Dental Practice, 2004).

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