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Effect of a domiciliary facial cooling system on generic quality of life after removal of mandibular third molars

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Abstract

To evaluate quality of life (QoL) and patients' perceptions of a domiciliary facial cooling system (Hilotherm[®], Hilotherapy UK Ltd, Coventry, UK), we asked 30 patients to complete a paper-based EQ-5D-3L QoL questionnaire (EuroQol Group 1990, Rotterdam, The Netherlands) each day for seven days after the removal of mandibular third molars. They were returned by 14 of the 20 patients who had not used the system and by all 10 who had. Patients aged between 18 and 25 who had their teeth removed in outpatients (in accordance with National Institute for Health and Care Excellence guidelines) under general anaesthesia (American Association of Anesthesiologists (ASA) class I or II) and did not smoke, were included. They were all treated by the same surgeon in the day surgery unit of a district general hospital. Patients found the system helpful and easy to use. They had no complications, their QoL was significantly improved ($p < 0.001$), and the time taken to return to normal activities was reduced. The Hilotherm[®] domiciliary facial cooling system is safe and helps in the management of postoperative pain and swelling. Our findings confirm recently published meta-analyses that show the effectiveness of hilotherapy after facial surgery.

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Keywords: Quality of Life; Patient-reported outcomes; Mandibular third molar removal

Introduction

The extraction of third molars can be complicated by moderate to severe pain and swelling immediately postoperatively,^{1,2} which can affect a patient's quality of life (QoL).^{3–6} To evaluate the potential impact of hilotherapy on QoL after removal of these teeth, we used individual domains of the EQ-5D-3L questionnaire (EuroQol Group 1990, Rotterdam) (Figs. 1 and 2),⁷ which patients had previously found

to be relevant measures of QoL after the removal of mandibular third molars.⁸

Cooling compresses have traditionally been used to reduce postoperative pain and swelling, but their effectiveness has been questioned in objective studies.⁹ The Hilotherm[®] non-domiciliary facial cooling system (Hilotherapy UK Ltd, Coventry, UK) delivers a consistently low temperature (15 °C), and meta-analyses have shown that its use reduces pain and swelling after orthognathic surgery. Patients complied well and were more satisfied than those who had used traditional cooling packs or compresses.¹⁰

As part of a service evaluation, we collected patients' feedback on the use of a new Hilotherm[®] domiciliary facial

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By placing a tick in one box in each group below, please indicate which statements best describe your own health state today.

Mobility

I have no problems in walking about

I have some problems in walking about

I am confined to bed

Self-Care

I have no problems with self-care

I have some problems washing or dressing myself

I am unable to wash or dress myself

Usual Activities (e.g. work, study, housework, family or leisure activities)

I have no problems with performing my usual activities

I have some problems with performing my usual activities

I am unable to perform my usual activities

Pain / Discomfort

I have no pain or discomfort

I have moderate pain or discomfort

I have extreme pain or discomfort

Anxiety / Depression

I am not anxious or depressed

I am moderately anxious or depressed

I am extremely anxious or depressed

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Fig. 1. EQ-5D-3L survey Part 1.

cooling system in the early postoperative period to evaluate ease of use and improvements in QoL.

Methods

We asked patients to complete the EQ-5D-3L parts 1 and 2 (Figs. 1 and 2) daily for seven days postoperatively (permiss-

ion granted for use by EuroQol Group Foundation on this number of patients on 16/01/2014). The questionnaire was printed on seven sheets of A4 paper (one for each day), and patients were given a prepaid envelope in which to return the completed sheets. Those aged 18 to 25 who were American Society of Anesthesiologists (ASA) class I or II, and did not smoke, were included. They had at least one horizontal, or mesioangularly impacted tooth removed by the raising of a

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