

UK temporomandibular joint replacement database: report on baseline data

Matthew R. Idle^{a,*}, Derek Lowe^b, Simon N. Rogers^c, Andrew J. Sidebottom^d, Bernard Speculand^e, Stephen F. Worrall^f

^a Maxillofacial Unit, Royal Shrewsbury Hospital, Shrewsbury SY3 8XQ, UK

^b Regional Maxillofacial Unit, University Hospital Aintree, Liverpool L9 7LN, UK

^c Regional Maxillofacial Unit, University Hospital Aintree, Liverpool L9 7LN, UK

^d Maxillofacial Unit, Queens Medical Centre, Nottingham NG7 2UH, UK

^e Maxillofacial Unit, Queen Elizabeth Hospital, Birmingham B15 2TH, UK

^f Maxillofacial Unit, Bradford Teaching Hospitals, Bradford BD9 6RJ, UK

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Abstract

Our goal is to establish the long-term collection of data on temporomandibular joint replacement from all centres in the UK where this is done. Currently, 16 surgeons have been identified, and 13 of them had entered data when this paper was being prepared. Data are entered online through the Snap Survey and then analysed annually. We report on 402 patients (332 (83%) female and 70 (17%) male) who had 577 joints inserted between 1994 and 2012. The main diagnoses that resulted in total joint replacement were osteoarthritis, failed operation, ankylosis, and seronegative arthritis. Preoperatively, the median (IQR) maximal incisal opening was 20 (15–26) mm (mean 20) and the median pain scores on the visual analogue scale (VAS 0–10) were 8 for both joints. The median (IQR) baseline dietary score (liquid 0 – solid 10) was 4 (3–6). A total of 173 (43%) patients had had one or more open procedure(s) before total replacement, 177 (44%) had not had open operation, and 52 (13%) had no data entered. The 3 primary systems used were the TMJ Concepts System (Ventura, USA), the Biomet System (Biomet/Lorenz Microfixation, Jacksonville, USA), and the Christensen System (TMJ Implants, Golden, USA). The median (IQR) duration of inpatient stay was 3 (2–4) days (mean 3). Follow-up data will be collected to assess patient recorded outcome measures (PROM) and objective measurements of total joint replacements in the UK from 1994 onwards.

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Introduction

In the UK, temporomandibular joint (TMJ) replacement surgery has been performed since 1987,¹ and UK guidelines for the procedure were published in 2008 on behalf of the British Association of Oral and Maxillofacial Surgeons (BAOMS).²

Regulations for surgeons in the UK changed after the deaths of children having heart surgery in Bristol, which

came to prominence in 1998.³ Surgeons must now show that their results are comparable with those of their peers, and appropriate data should also include patient reported outcome measures (PROM). UK TMJ replacement surgeons were approached by the National Institute for Health and Care Excellence (NICE) and asked to provide national data on TMJ replacement. The British Association of TMJ Surgeons (BATS) therefore developed an internet-accessed tool to achieve this.

Medical revalidation, which was introduced by the UK General Medical Council in December 2012, is the process by which licensed doctors are regularly required to show that they are up to date and fit to practise.⁴ It is intended to provide

* Corresponding author at: Flat 225, Liberty Place, Sheepcote Street, Birmingham B16 8JZ, UK. Tel.: +44 7967 322 285.

E-mail address: mattidle@doctors.org.uk (M.R. Idle).

patients with additional confidence regarding their medical practitioner. As part of this process, surgeons must collect and analyse outcome data, and BATS decided to collect and enter data using the Snap Surveys tool. The aim is to provide national data on TMJ replacement, and to give each surgeon their own outcome data to compare with their peers.

A national database will allow surgeons to pool their experience in terms of indications, case mix, and activity, and to share outcomes at various specified points after operation. It is hoped that eventually it will lead to the collection of long-term outcome data. Such data would also be available to patients.

The purpose of this paper is to describe our process and report the baseline data collected at the end of the first year.

Method

Standardised data collection forms were designed to include process, objective, and patient-derived elements. The data points captured for each joint replacement operation are baseline (preoperative), 6 weeks, one year, and annually up to 10 years (follow-up may be extended beyond 10 years in the future).

Data entry, which began in the summer of 2011, is done by individual surgeons using the link to the Snap Surveys tool⁵ on the BATS website.⁶ Snap ensures that this is secure: a central server is used for storage and transfer is encrypted. At chosen points in time data can be retrieved and analysed, and for this paper data were exported from Snap into SPSS version 19 (IBM SPSS Statistics for Windows, IBM Corp) for analysis.

Currently 16 TMJ replacement surgeons have been identified in 11 centres throughout the UK. Thirteen surgeons entered the data included in this paper and the remaining 3 entered data after the initial trawl had been completed. Inspection of historical records showed that adequate detailed retrospective data exist from 1994 so this date was selected as the start time for the database. Data from 2 surgeons covering the period 1988 to 1997 have already been published.⁷ We report baseline data from 1994 to 2012.

Retrospective data from 1994 to 2011 may not include all the fields defined in the Snap database, notably those on quality of life and PROM. Since 2011, prospective data, which are completed using the standardised Snap data collection form in clinic, can be uploaded into the central database.

Results

For 1994–2012 the baseline details of 402 patients (577 joints) undergoing total joint replacement were entered on the database (Fig. 1). A total of 332 were female (83%) and 70 were male (17%). Mean (SD) age was 44 (13) years (median (IQR) 44 (35–52), range 17–80). A total of 136 (34%) refer-

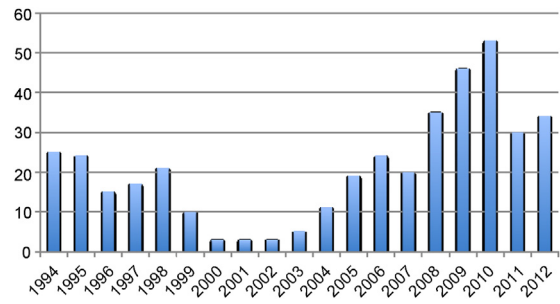


Fig. 1. Total joint replacement cases submitted to database by year of operation.

rals were from the catchment area of the local hospital, 96 (24%) were from another hospital within the region, 157 (39%) were from a UK hospital outside the region, 7 (2%) were from overseas, and 6 were unknown. The diagnoses established at baseline are shown in Table 1.

Data collected on the counselling process for the procedure showed that 292 patients (73%) were given written information about the operation, 225 (56%) were given NICE guidelines, 356 (89%) were given manufacturer's information, and 198 (49%) had the unit's own information leaflet.

Median (IQR) preoperative maximal incisal opening of 20 (15–26) mm (mean 20) was recorded in 380 (95%) patients. Pain scores recorded on the visual analogue scale (VAS 0–10) at initial presentation were similar for both sides. Median (IQR) pain scores were 8 (3–10) for the left side ($n = 317$) and 8 (2–10) for the right ($n = 333$). Table 2 shows the distribution of these scores with a comparison between sides for the 293 patients who had bilateral pain scores recorded.

Preoperative chewing function was recorded as a dietary score (0: liquid diet only – 10: normal diet). The median (IQR) score was 4 (3–6) ($n = 302$), which suggests that patients who require total joint replacement often need a soft diet.

Surgeons were asked to record any conservative management that was instigated before total replacement. Data show that 345 patients (86%) had been advised to rest the joint, 350 (87%) had been prescribed non-steroidal anti-inflammatory drugs, 218 (54%) had been given a bite splint, 203 (50%)

Table 1
Diagnosis of total joint replacement (TJR) cases at baseline.

Diagnosis	No (%) ($n = 402$)
Ankylosis	65 (16)
Rheumatoid arthritis	29 (7)
Seronegative arthritis	50 (12)
Osteoarthritis	193 (48)
Septic arthritis	1 (0.2)
Traumatic	35 (9)
Congenital/craniofacial	2 (0.5)
Orthognathic condylar resorption	3 (0.7)
Oncology	2 (0.5)
Previous failed operation	88 (22)
Revision prosthesis	42 (10)
Other	24 (6)

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