# Case study: a multidisciplinary approach for a patient with a cleft lip and palate and learning difficulties

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## INTRODUCTION

Children with learning difficulties can be difficult to examine and to treat, and investigations which would normally be possible on a fully conscious young patient might cause excessive distress or be virtually impossible unless done under general anaesthetic (GA).

This case report describes cooperation between clinical teams who took the opportunity of a general anaesthetic given for one procedure, to carry out investigations and take records needed by another speciality; investigations which the child patient would otherwise have been unable to tolerate.

## CASE REPORT

A 12-year-old boy was under the care of the local community dental service (CDS) and the Newcastle-based cleft palate team at Carlisle. The CDS provides treatment for patients with impairment or disability who find it difficult to cope with routine dentistry.

A cleft palate team consists of cleft specialist nurse, clinical psychologist, consultant in plastic surgery, genetics team, consultant orthodontist, paediatric dentist, photographer, and speech and language therapist.

### Concerns

His parents were concerned about the prominence and crowding of his teeth, and felt this was affecting his ability to speak clearly, eat well and causing problems with dribbling, on top of the obvious effect on his appearance. They reported that the patient had difficulty tolerating the social complexity of a combined clinic with lots of clinicians present. His parents asked if his dental work could be done under the same GA as his impending surgery to one eyelid.

### Medical history

This included premature birth, the Pierre Robin sequence, cerebral palsy and developmental delay.

### Proposed procedures

- surgery planned on one eyelid under GA
- review with cleft palate team
- dental examination and treatment under general anaesthesia by CDS

### Clinical examination

The patient presented with a very small mandible consistent with Pierre Robin sequence, and severe dental crowding and a markedly increased overjet. His difficulties understanding and following instructions would make radiography of the teeth and jaws a problem, and would almost certainly preclude taking intra-oral photographs or impressions.

### Treatment planning

The Royal College of Surgeons Guideline for the Use of General Anaesthesia in Paediatric Dentistry states:[1]

- repeat GA is undesirable in terms of morbidity, potential mortality, behavioural/emotional effects on the child, and cost
- repeat GA may be required for children with medical or behavioural conditions which make GA the most practical method of providing dental care

It was judged that it would be useful to see if dental records consisting of radiographs, photographs and impressions for study models could be arranged to be done under the same GA as the impending eye surgery. This would help the cleft palate team with treatment planning, and help them to give advice on any dental extractions which could then be done by the CDS team.

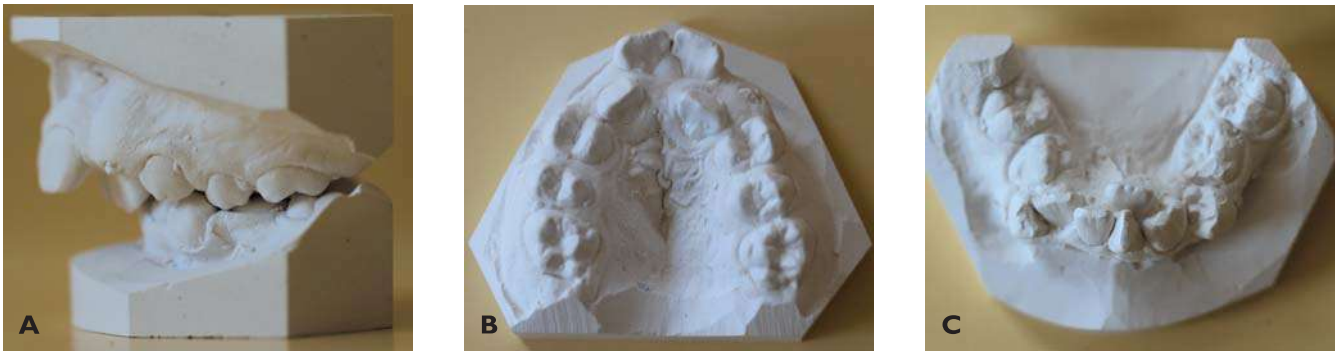


*Figure 1 Study models. These show left side (A) and occlusal views of both upper (B) and lower (C) teeth. The abnormal appearance of midline of the palate is associated with the repaired posterior cleft*

### Coordination
The orthodontic consultants on the cleft palate team agreed it would be useful for them to have the records. It was agreed with the ophthalmic surgeon that the patient would be operated upon first. The superintendent radiographer was consulted, and it was decided that lateral oblique plain films and a maxillary occlusal view could be done using the mobile X-ray machine in theatre.

### Procedure
Written consent for photographs, impressions and radiographs was taken. The CDS team consisted of AW and MDA. Equipment taken to theatre by CDS team included: camera; cheek retractors; a selection of impression trays and impression materials; and a removable appliance kit in case the impression trays needed to be trimmed. Photos and alginate impressions were taken in the anaesthetic room under intra-venous GA with supplemental oxygen via a naso-pharyngeal tube. The patient was then transferred to theatre, where lateral oblique and anterior occlusal radiographs were taken. Record taking took longer than originally estimated, in part due to the additional work positioning the patient whilst maintaining anaesthesia.

### Results
Some of the records taken are illustrated in figures 1, 2 and 3.

### Special needs BDA case-mix score
BDA case-mix score was 35, reflecting the impact of problems with ability to communicate, ability to cooperate, medical status and oral risk factors.

The case-mix score is '*. . . a tool designed to measure patient complexity by using a system of identifiable criteria applied to a weighted scoring system. The model identifies the various challenges patient complexity can present dental services (such as difficulties in communication or cooperation). These may result in the need for a greater length of time or additional staff to provide care for a particular patient, in comparison to an average member of the population, irrespective of which contract currency is in use to monitor the dental work undertaken.*'[2,3]

### Orthodontic indices
Index of Orthodontic Treatment Need (IOTN) Dental health component score was 5p (defects of cleft lip and palate and other craniofacial anomalies).[4] IOTN Dental aesthetic component score was 10 (definite need for treatment).[4] Peer Assessment Rating (PAR) score was 66. This measures the summed scores of deviant occlusal traits.[5]

The high score for all three indices reflect a malocclusion with major impact on dental health and aesthetics, and extensive deviation from normal alignment.

### Sharing records
The cleft palate team meeting in Carlisle is in a different area for PACS, so arrangement was made with the PACS office for a named recipient (in this case a consultant orthodontist) to have the X-ray images transferred to them. Study models and photographs were copied and sent in the usual way by post.

## CONCLUSION

This case report shows how cooperation between clinical departments facilitated record taking for treatment planning for the care of a child with complicated medical conditions and learning difficulties.

### Costs included
- time taken organising carrying out record taking
- the presence of two senior dental clinicians
- intrusion on another operating list

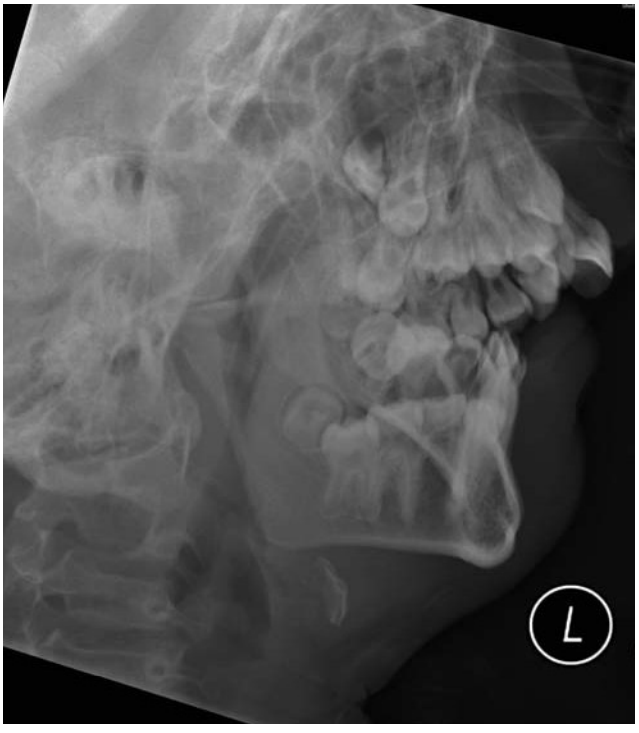


*Figure 2 Radiographs. Left lateral oblique shown. Absence of the lower-left premolar is shown, and retention of the lower-left second deciduous molar*

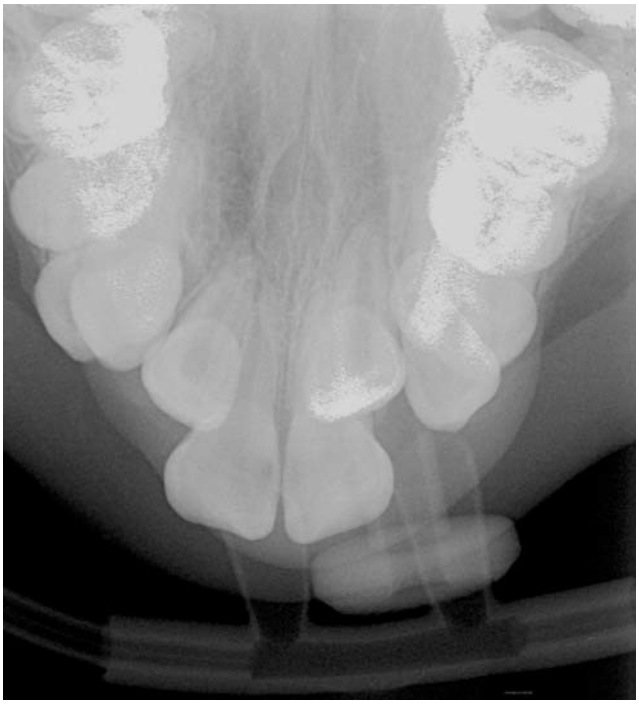

*Figure 3 The anterior occlusal radiograph had a more grainy image than would be given by a dental X-ray machine operating at 70kV. The mobile theatre X-ray machine did not have a variable timer, so exposure was compensated for by reducing to 60kV*

**Benefits included**

- reduced cost by saving another anaesthetic being needed to take records
- provided records for treatment planning by the cleft palate team, and the child's dental surgeon
- removed distress to the child of investigations being done whilst conscious
- removed the need for another GA specifically for investigations to be done
- reduced costs and travel for the family

**Procedural knowledge gained**

- time taken to take records was longer than anticipated

## REFERENCES


1. Royal College of Surgeons. UK National Guidelines in Paediatric Dentistry. Guideline for the Use of General Anaesthesia (GA) in Paediatric Dentistry. RCS Faculty of Dental Surgery Clinical Effectiveness Committee. 2008. p7
2. Case Mix, Introduction. Available at: http://www.bda.org/dentists/representation/salaried-primary-care-dentists/cccphd/casemix/
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4. The Index of Orthodontic Treatment Need (IOTN). In: Richmond S. Evaluating Effective Orthodontic Care. First Numerics Ltd. 2008
5. The Peer Assessment Rating. In: Richmond S. Evaluating Effective Orthodontic Care. First Numerics Ltd. 2008


# QUID EST HOC?


What is this, and what is it used for?

A £25 book token will be awarded for the first correct answer to be drawn at random.

VOLUME 6 NUMBER 10


This is an elbow joint prosthesis. Made of titanium, and in two parts; the part with the short spike is inserted into the ulnar, the long spike is inserted into the humerus.

The Charnley Unit in Wrightington developed this in the 1990s, but it was not a success and very few were used.

There were no correct answers.