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Review Article

General principles governing record taking in patients with cleft lip and palate

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ABSTRACT

(WHO meetings on International Collaborative Research on Craniofacial Anomalies).[1]
One of the most common congenital anomaly we come across is the Cleft Lip and palate where affected children suffer from range of functional as well as aesthetic problems. Cleft lip and palate is a multifunctional disease associated with environmental factors. Management of cleft is a complex procedure and demands co-operation among experts from different fields. Clinical treatment procedure extends from beginning of birth, to achieving skeletal maturity effectively.

1. Introduction

One of the most common congenital anomaly we come across is the Cleft Lip and palate where affected children suffer from range of functional as well as aesthetic problems. Cleft lip and palate is a multifunctional disease associated with environmental factors. Management of cleft is a complex procedure and demands co-operation among experts from different fields. Clinical treatment procedure extends from beginning of birth, to achieving skeletal maturity effectively. It is thus very important to note and record all the features affecting growth and final outcome of result in cleft palate patients. Cleft treatment is a complex multifactorial aspect involving specialist in multidisciplinary field like Pedodontist, Speech therapist, Oral surgeon, Nurse, ENT, Maxillo-facial surgeon, Prosthodontics, and Psychiatrist. As the orthodontic treatment of patients with cleft is extensive, the orthodontist plays an important role in timing and sequence of treatment.

1.1. Record for treatment planning /monitoring[2]

Clinical records should be taken for individual patients to allow treatment planning, monitoring treatment progress and treatment evaluation. The timing and nature of these records will depend on the clinical protocols followed by individual teams. Treatment and associated record taking protocols should be agreed and clearly set out by the cleft team.

1.2. Record for quality improvement/Research. Additional records are taken for

1. To allow retrospective comparison of different protocols.
2. As a part of prospective clinical trial with ethical approval.
3. As part of an agreed protocol for intercentre quality-improvement comparisons or comparisons against known standards.
4. As a part of an agreed research protocols.
5. Other reason, such as medicolegal second opinion.

Research and quality improvement records should coincide as far as possible with the records of treatment

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Table 1: Complete Cleft Lip and palate (UCLP & BCLP)

Timing	Models	Lat. skulllRadio Graphy	Photographs	Speech/Tympanometry	Audiometry	PT/Parent Satisfaction.
Primary surgery	v	—	v	v	v	
3yrs	-	-	v	v*	v*	
5/6 years	v		v	v*	v	
10 yrs	v		v	v*	v*	
	v	V	v	v	v	
18yrs	v	V	v	v	v	

Table 2: Left palateonly[2]

Timing	Models	Lat.skull radiograph	Photographs	Speech /tympanometry	Audiometry	Patient/parent Satisfaction.
Primary surgery	vL		v			
3 years				v	v	
5/6 years	v			v	v	
15/16 years	v	v	v	v	v	

Table 3: Left lip only.[2]

Timing	Models	Photographs	Patient parent satisfaction
Primary surgery	V*	v	
3years			
5/6 years	V*	v	
10 years			
18+ years		v	v

*Indicates if hard palate is closed.

Table 4: Alveolar Bone Grafting[2]

Timing	Intra oral x ray	Photographs
Just before bone graft	v	v
6 months after	v	
After canine fully Erupted	v	v

Table 5: V Pharnngoplasty[2]

Timing	Speech sample
Just before operation	v
One year after operation	v

Table 6:

Timing	Lateral cephalogram	Models
Just before operation	v	v
One year after Operation	v	v

Table 7:

Procedure	Timing
Cleft lip repair	After 10 weeks
Cleft palate	9 to 18 months
Pharyngeal flap or pharyngoplasty	3 to 5 years or later based on speech development.
Maxillary/Alveolar reconstruction with bone grafting	6 to 9 yrs based on dental development
Cleft Orthognathic surgery	14 to 16 yrs in girls 16 to 18 yrs in boys
Cleft Rhinoplasty	After age 5 but preferably at skeletal maturing; after orthognathic surgery whenever possible.
Cleft Lip revision	Anytime once initial modelling and scar maturation is complete.

planning/monitoring.

1.3. Safeguards to be considered

1. Exposure of patients to unnecessary radiation should be avoided.
2. Research and quality improvement records should be taken when there is a
3. Established protocol on how they will be put to use, and with the consent of the patient/parent/Guardian. Timing of Minimum Records[2]

1.4. Records taking methodology[3]

Discussion of the precise method of record taking is constantly under consideration globally. The currently followed protocol widely in Europe is being discussed in the discussion.

1.5. Photographs

Clear photographs taken with standardization are helpful. Video recordings taken in standardized Way recorded for cleft pre/post operatively are preferred but used by few clinicians. Basic views recommended are:Frontal/Both Laterals Three-quarter Facial oblique view.

1.6. Dynamic views

During smiling and whistling will give an idea of function of the circumoral musculature. Video recordings are preferred but standardization has to be set yet.

1.7. Lighting and Background

Lighting of the studio should be two fill-in lights and the main light synchronized with the camera. For wards or operating theatres a single flash unit is appropriate. Blue background is recommended.

1.8. Framing of the picture

1. For frontal view the camera has to be set at a ratio of 1:8
2. For Lateral view, the camera should be set at a ratio of 1:8
3. For inferior view, the camera should be set at a ratio of 1:4

1.9. Camera and len

Suggested camera is Nikon with a 105mm lens or equivalent. Film type and speed need not be standardized.

1.10. Dental cast

Dental cast need to be made from well taken impressions including all teeth, the palate and buccal sulcus. For comparative studies the cast need to be prepared in a standard manner so that source of models cannot be identified. Models should be cast in vaccum — mixed white stone, hand trimmed, using a fine wheel to the standard heights and angles as per specifications. Finishing is preferred with wet and dry paper and not soaped.

1.11. Speech[4]

A fundamental problem for speech and language pathology is the lack of an unacceptable framework for measuring speech. The Great Ormond street assessment (GOS.SP. ASS) tool, Which is nationally agreed speech assessment tool for cleft palate/valo-pharangeal incompetence in English Harland in 1987 devised the Cleft Audit Protocol for speech (CAPS) a more succinct protocol specifically designed for audit purpose. A -good quality audio recording using high quality microphone is recommended for measuring Intelligibility, Nasality and assessing articulation. Errors made can be broadly categorized or group according to Front of mouth oral sound errors; Back of mouth oral-sound errors; Non oral sounds; Passive errors and immaturities. Good record keeping lays a foundation for planning a definite treatment plan with team support. Treatment protocol[5] of patients with cleft lip and cleft palate for staged reconstruction can be considered as:

1.12. Antenatal diagnosi:[6]

Three dimensional/four-dimensional Ultrasound methods gives better quality picture for parents, benefits the foetal magnetic resonance imaging and offers a realistic means of predicting important information about the palate which has a bearing upon Childs feeding, speech and facial growth capacity. Targeted level II ultrasound is designed to check babie's anatomy is the best method for prenatal diagnosis for cleft. Twenty weeks foetal anomaly ultrasound scanning should include observation of facial elements as routine. Administration of 0.4mg of Folic acid[7] reduces the risk of cleft lip by $1/3^{rd}$. It is a vitamin found in leafy vegetable, beans, citrus fruits, and whole grains. Folic acid reduces the risk of neural tube defects including spina bifida.

2. Source of Funding

None.

3. Conflict of Interest

None.

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