Fellowship in Cleft Orthodontics

Post Graduate Department of Plastic Surgery,

King George's Medical University, U.P.,

Lucknow-226003

34-22

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Section A- 1) Overview:

A fellowship in cleft and craniofacial orthodontics is a planned post-residency program that contains advanced education and training in cleft craniofacial anomalies patients and focused orthodontics treatment.

This twelve month clinical fellowship will train an orthodontist in the care of patients with craniofacial anomalies, syndromes, and associated special needs. The fellow will evaluate and treat patients at the post graduate department of Plastic Surgery King Georges Medical University, UP, Lucknow. This comprehensive program includes clinical, research and service components. The fellow will work closely with faculty, other fellows, graduate students, staff, patients, and patient families to understand the interdependent nature of craniofacial care.

2) Aims and Objectives of Fellowship Program:

- Provide orthodontic care to craniofacial and special needs patients as part of a craniofacial team
- Train orthodontists to become leaders in the fields and special needs communities
- Establish a close understanding and working relationship with other Disciplines involved (Plastic surgery, Speech therapy, ENT, Genetics, and Psychology)
- Develop good clinical alliances to encourage coordinated management of relevant clinical services throughout the region.
- Develop patient-based research and therapies based on outcomes assessments.

3) Need for fellowship:

Fellowship program is to obtain the best treatment outcome with the smallest burden of care for patients. Our goal is to provide our patients with the highest level of functional, structural and esthetics balance. In addition, also support research to improve diagnosis and treatment for our patients.

The treatment of cleft lip and palate is best provided in an interdisciplinary team. In India, although most patients do get surgical treatment but lack a comprehensive treatment where speech and orthodontics play a major contribution tothe total outcome. Therefore, these patients, though having their lip and palatal

repaired, remain handicapped with severe malocclusion which becomes morecomplex with time till adulthood.

Although many centres in India, especially NGOs like Smile Train, Operation Smile and some Plastic Surgery department in medical colleges and some Oral Surgery department in dental colleges provide surgical treatment but most institutions lack comprehensive orthodontic care. The orthodontic care of these patients begins from birth and is required till adulthood. The post graduate orthodontic curriculum does not have a significant component of the cleft orthodontics and do not have formally trained persons in this subspecialty.

Routine orthodontics is much more rewarding than caring for complex problems of treating children with handicapping malocclusion such as cleft lip and palate and craniofacial deformities. Consequently, trained orthodontists avoid helping such patients. In public set up hospitals, only three institutes in north India/ Rest of India have delivered cleft orthodontic services by virtue of formal training abroad. These institutes are King Georges Medical University Lucknow, AIIMS and PGIMER Chandigarh.

In order to see these children to live a normal life, rehabilitation of their face and occlusion is essential. It is indeed the requirement of the country that this subspecialty of orthodontics to be formally developed for furtherance of science and services to humanity.

4) CLEFT TEAM:

Treatment course of a cleft patient and approach is based on the consultation among

The specialists involved with the cleft care.

- **Neonatologist:** Neonatologist will take care of newborn baby's health and medical problems and also monitors heart, lungs and other systems of the body to rule out if cleft lip and palate are the only defects or they are associated with other anomalies.
- **Plastic surgeon:** Primary and secondary repair of the cleft, correction of nose deformity, secondary deformities of the lip and scar revision secondary alveolar bone grafting and orthognathic surgery, if required.
- **Orthodontist:** The orthodontist monitors dental development, occlusion, and skeletal problems and provided interceptive therapy, dent facial orthopedics

SECTION B:

GENERAL REQUIREMENTS FOR FELLOWSHIP PROGRAMME

1. NUMBER OF SEATS, ELIGIBILITY FOR ENTRY, SELECTION:

Number of seats

One candidate per academic session will be admitted.

(For sponsored candidate, as per rules of KGMU act, candidate, who is already in teaching or consultant's position in Government medical / dental College or other recognized medical / dental Institutions, and have at least 3 years of teaching experience / faculty from Institutions with Cleft Care Unit, will be given preference. They will be paid by their respective parent organizations).

Eligibility:

1) The applicant must have completed MDS in Orthodontics from a recognized Medical /Dental University.

2) He must be registered with Dental Council of India

3) He must have completed Residency in Orthodontics or equivalent experience in a teaching dental college or institution

Age limit: Less than 40 years of age.

Selection: Selection of candidates for the Cleft Orthodontic as per KGMU rules.

2. PROGRAMME DESIGN, DURATION, MODES OF LEARNING, RESEARCH

Duration of Fellowship Program– 1 year

Modes of student learning

and prepares for secondary alveolar bone graft and also acts as coordinator for the child's problems with all other specialists.

- **ENT specialist:** Since many of the patients with cleft have a defective Eustachian tube function secondary to the altered muscle attachments on the tube and due to persistent nasal regurgitation, many suffer from hearing defects including CSOM, tympanic membrane defects and sometimes advanced hearing loss resulting from adhesions of the ear bones. The ENT expert examines the cases for necessary interventions and referrals.
- **Speech pathologist:** Speech pathologist assesses the nature and severity of speech and communication problems of the child. He monitors speech and provide measures for normal development of speech
- **Prosthodontist:** The Prosthodontist monitor missing teeth rehabilitation and other fixed and removable appliances.

5) Faculty:

Faculty Plastic surgeon:

- Dr A K Singh
  Prof & head
  P G Deptt of plastic surgery
  King Georges Medical University, UP, Lucknow
- Dr Vijay Kumar
  Professor
- Dr Brijesh Mishra
  Professor
- Dr Divya N Upadhyaya
  Additional Professor

Faculty orthodontics:

- Dr Veerendra Prasad
  Additional Professor
  In charge maxillofacial lab P G Department of Plastic Surgery
  King Georges Medical University, UP, Lucknow

present work to local and additional audiences and be involved in other research programs.

3. FELLOWSHIP TRAINING PROGRAM: KNOWLEDGE, SKILLS, ATTITUDE EXPECTED

The following advanced knowledge and skills should be acquired at the end of the training program:

a) An advanced understanding of:-

I. Epidemiology of cleft lip and palate, birth defects of face and major craniofacial anomalies.

II. Normal and abnormal growth of face

III. Etiological/ contributing factors in development of clefts

IV. Embryology

V. Genetics

VI. Social and psychological aspects

b) Clinical expertise in:-

I) Impression making in a cleft patient and pre-surgical orthopedics (Naso-alveolar Molding)

II) 3D Computer based surgical and craniofacial orthodontic planning.

III) Pre and post-surgical orthodontic management

IV) Surgical splint design and construction and insertion of surgical fixation splints in the operating room

c) A detailed knowledge of the relevant aspects of related specialties:-

I. Surgical aspect related to cleft patients

II) Speech in cleft patients

a. Lectures: There will be two didactic lectures every month on a topic of the teaching program.

b. Participation in craniofacial team: the fellow will be the integral member of the cleft/ craniofacial team, will work intimately with the multispecialty craniofacial team members to diagnose, treatment plan and treat patients. He will participate in weekly meetings of the cleft palate and craniofacial teams.

c. Bed side learning: There will be weekly Consultant rounds of indoor patients with discussion of cases. These discussions will include clinical findings, laboratory data and their interpretation, treatment and further course of action in each patient.

Research in Cleft Orthodontics Fellowship Program:

The aim of the research component of the program is to provide training in research and methodology. This should include the ability to critically assess research papers, design and run a research program.

A. Participation in clinical and/or basic research: Fellow is expected to initiate and complete at least one clinical research project during their training.

Protocol of his clinical or basic research should be submitted within 2 months of his joining and completed the work before he can be eligible for appearing in the exam by showing his credential in the form of publication. These will be mentored by craniofacial orthodontic or plastic surgery faculty members. The progress of this work, which is an important pre-requisite for completion of the course, will be reviewed at regular meetings of the department and results published at appropriate time based on progress of the work.

B. Publications: Candidates should preferably submit two papers (case reports or hypotheses-driven research) in peer reviewed journals related to the field of Craniofacial Anomalies and Special Care (CFA&SC) orthodontics.

C. Presentation: Fellow should attend scientific meetings and/or continuing education courses at the local, regional, or national and international levels. It is expected that the trainee be involved in regular attendances at research meetings,

Content

1. Epidemiology of CLP, birth defects of face and major craniofacial anomalies
2. Normal and abnormal development of face
3. Etiology in development of clefts
4. Social and psychological aspects
4. Risk assessment and genetic counseling
5. Feeding and counselling
6. The disease burden in India/ SAARC and issues related to cleft care in India

II. Speech and hearing

Objectives

- To elicit and understand the speech disorders
- To be proficient in undertaking orthodontic treatment required for articulation of speech
- To be proficient in reviewing audiology report and interact with audiologist, ENT surgeon and speech therapist with respect to differential diagnosis of nasality due to fistula

Content

1. Speech disorders in CLP patients
2. Speech therapy in CLP patients
3. Audiology

III. Surgical aspect of CLP care

Objectives

III) Audiology

d) Experience and knowledge of:-

I. Administration and management of running a Joint clinic

II. Teaching

III. Legal and ethical issues

iIV. Epidemiology, statistics, research and audit.

Teaching

The candidate should gain experience in teaching which will include:-

1. Responsibility for teaching junior staff in their subspecialty area

2. Participation in the Postgraduate program. with some administrative responsibility for the organisation of teaching in their subspecialty

3. Gain experience of appraisal and assessment techniques

4. Participation in research related activities

4. Curriculum Structure

I. Fundamentals of cleft care

Objectives

- To have advanced understanding of the subject
- To have complete understanding of surgical anatomy, abnormal muscle insertion and repair as related to restoration of normal anatomy and function
- To be able to make an assessment on feeding difficulties of the new born and advise appropriate feeding method
- To be able to issue feeding appliance and perform suitable adjustments

- To be proficient in all aspects of orthognathic surgical treatment planning on Lateral and PA cephalograms, virtual treatment planning on CBCT, with facial superimposition and soft tissue profile prediction

- To have knowledge of these surgical procedures and post surgical care

- To have knowledge of lip and nose revision surgery and impact on facial profile

Content

1. 3D planning of maxillofacial deformities

2. Surgical principles of:

a. Cleft lip and palate repair

b. Fistula repair and pharyngeoplasty

c. Bone grafting procedure

d. Orthognathic surgery/ Distraction osteogenesis

IV. Orthodontic aspect of CLP care

Objectives

- To be proficient in identifying the need for orthodontic treatment and undertake all orthodontic procedures

- To be proficient in carrying out the pre-surgical nasoalveolar molding procedure and monitor till primary surgery and follow up

- To be proficient in preparing a case for surgery using principles of pre surgical orthodontics, fabrication and issue of splint and post surgical orthodontic care

Content

1. Pre-surgical nasoalveolar molding

2. Pre and post surgical orthodontics

3. Comprehensive orthodontic treatment in permanent dentition including prosthetic rehabilitation

V. Advances in cleft care

1. Bone graft substitute and stem cells in CLP

2. 3D imaging and appliance fabrication using 3D printer

SECTION C:

Assessment
- As per KGMU rules