



SRI LANKA ORTHODONTIC CONFERENCE 2022

“Emerging trends for ultimate perfection”

ABSTRACT BOOK

1st to 4th May 2022
@Grand Kandyan Hotel, Kandy



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Contents

SLOS Council Photograph 3

SLOS Council 4

Messages

- President SLOS 5
- Chairman, Scientific Committee 6
- Chief Guest 7

Pre Conference Workshop 9

Program at a glance 12

Guest Speaker Profiles and Lecture summaries 15

Abstracts of Free Papers 29

Abstracts of Posters 33

Post-Conference Workshop 41

Acknowledgements 44

Notes 45

Council of Sri Lanka Orthodontic Society



Council of Sri Lanka Orthodontic Society

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Message from the President, Sri Lanka Orthodontic Society



It gives me immense pleasure and a deep sense of pride to release this message on the theme “Emerging trends for ultimate perfection” for our forthcoming Orthodontic Conference 2022. The problem of malocclusion, crooked teeth and anomalies of face such as Cleft Lip and palate have a huge burden on the society and requires to be taken care by Orthodontists. It would be a significant understatement to say that we are living in troubled times. Life has been significantly rearranged in the last two years. Even with this

Covid Pandemic we have organized a very carefully planned program to suit our theme and have a line of foreign and local speakers to speak to us on the most current advances in Orthodontics.

With this theme, this Congress can only be described as a work of passion and the culmination of the long time dedication, commitment and drive that we as the congress organizing committee have put in to it.

The most touching point for us was that all the speakers agreed to come and offer the support, give us their encouragement and be present to share with all of us the many decades of orthodontic experience between them – without any conditions attached.

I take this opportunity to express my gratitude to my Council, all the speakers from overseas and our own who will in great measure update the participants and induce in them a lot of fresh thinking on the road to perfection.

I wish to thank everyone in the organizing committee for all their efforts to make this event a success.

Dr. Ratnakumara Dissanayake

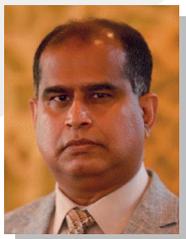
BDS (Cey); MS Orth (Col); MOrthRCS (Edin); FDSRCS (Edin)

Consultant Orthodontist

Sirimavo Bandaranayake Specialized Childrens’ Hospital

Peradeniya

Message from the Chairperson, Scientific Sessions



I am honoured and privileged to forward this message as the chairperson of the scientific committee of the 10th conference of the Sri Lanka Orthodontic society welcoming all participants to the historic city of Kandy.

It is indeed a great pleasure to host the scientific sessions this year despite all the barriers and uncertainties we are facing globally and locally. Hence, I deeply appreciate your participation at this event which ascertains your commitment to professional development.

We were fortunate to find an array of eminent speakers who have agreed to share their wisdom and expertise most generously with the participants. The programme consists of three workshops and lectures geared to sharpen the participants' skills and knowledge in emerging trends in orthodontics to ensure to achieve ultimate perfection in patient care. Furthermore, I hope the postgraduate forum will be a platform to our post graduate trainees to showcase their work and develop their soft skills.

I take this opportunity to thank our orator and all esteemed speakers and resource persons who have joined with us locally and internationally for their valuable contribution to the success of this event. I wish to thank all the post graduate trainees for their presentations. We are excited to see the promise you hold for the future.

A conference of this magnitude would not have been possible without our generous sponsors. I deeply appreciate your contribution and hope you will continue to collaborate with us in our future endeavors.

I am deeply indebted to the president and the council for their hard work and dedication in organizing an event of this caliber.

Finally, I wish this event to be a great success.

Dr S.L. Pathirage
Chairperson
Scientific Committee

Message from the Chief Guest



It is indeed a pleasure to send this message as the chief guest for the 10th conference of the Sri Lanka Orthodontic Society. The specialty has grown from a few specialists in the public and university sectors to a large number of specialists who are providing services to all provinces of Sri Lanka.

As the Director General of Health Services, I wish to extend my gratitude to the Sri Lanka Orthodontic Society for enabling our citizens to smile with confidence.

The COVID-19 pandemic was a dark cloud which haunted all our specialties, especially the fields of dentistry, which is slowly fading away. I am sure a conference of this nature will uplift and rejuvenate the orthodontists to refine their skills to serve better the nation.

The society, since its inception, has always strived towards perfection. Hence, the theme "Emerging trends for ultimate perfection" is timely as we are looking for new trends in all fields to provide better healthcare to our clients. I am sure that the academic programme is geared to enlighten all participants with the current knowledge and trends in orthodontics.

I wish to take this opportunity to extend my sincere gratitude to the society for the support extended to the Ministry of Health in developing a management protocol for the public sector orthodontic units and various other programmes.

I am looking forward to seeing you all in the ancient town of Kandy where I am hoping to join my fellow University of Peradeniya graduates in this biennial occasion.

I would like to take this opportunity to congratulate and thank the president, council, and membership of the Sri Lanka Orthodontic Society. I wish all the success for the 10th Conference of Orthodontic Society of Sri Lanka and their future endeavors.

Dr Asela Gunawardena
Director General of Health Services





PRE-CONFERENCE WORKSHOP

“OPG AND CONE BEAM RADIOLOGY”

“EVIDENCE BASED ORTHODONTICS”

01st May 2022





Prof Ruwan Jayasinghe, Dr Sumudu Medawala,
Dr Prasangi Peiris

Division of Oral Medicine & Radiology,
Faculty of Dental Sciences, University of Peradeniya

OPG AND CONE BEAM RADIOLOGY

Dento-maxillofacial radiology plays an important role in all specialities of dentistry. Among the wide range of imaging options available, Dental Panoramic Tomogram (DPT) and Cone Beam Computed Tomogram (CBCT) are popular among clinicians.

DPT is a two-dimensional imaging modality which shows all the teeth and their supporting structures on one film. It is one of the commonly utilised imaging methods in all the specialities of Dentistry. CBCT provides three-dimensional imaging of dento-maxillofacial with the luxury of visualizing the interested area without distortion or superimposition with a high accuracy in measurements.

Orthodontics is a specialised field in dentistry where accurate interpretation and precise measurements are paramount important in all stages of patient management. This workshop is to be conducted with the intention of providing knowledge and skills on using DPT & CBCT imaging in clinical practice.

At the end of the workshop the participants will be able to understand:

- Basic principles of DPT imaging
- Differences between 2D and 3D imaging
- Indications and limitations of DPT
- Common artifacts in DPT imaging
- Correct interpretation of DPTs
- Basic principles of CBCT imaging
- Advantages & limitations of CBCT imaging
- Selection criteria for CBCT imaging
- Correct interpretation of CBCT imaging

Participants will also have the competency of handling CBCT software on their own.



Dr Grant McIntyre

BDS, FDS RCPS, MOrth, PhD, FDS(Orth), FHEA,
FDS RCS, FdI NHS

Consultant and Honorary Professor in Orthodontics
at the University of Dundee Dental Hospital &
Schools

EVIDENCE BASED ORTHODONTICS

Following topics will be covered.

1. Research, trials and reviews
2. Treatment planning
3. Fixed appliances
4. Facial orthopaedics
5. Missing teeth
6. Canines
7. First permanent molars
8. Anchorage
9. Cleft care
10. Imaging

CONFERENCE PROGRAMME - DAY 1

02nd May 2022

8.00 am - 8.30 am	Registration	
8.30 am - 8.45 am	Opening ceremony	
	Speaker	Topic
8.45 am - 9.30 am	Dr Chetan V. Jayade	Class II Correctors
9.30 am - 10.30 am	Prof Grant McIntyre	Evidence Based Orthodontics
10.30 am - 11.00 am	Tea	
11.00 am - 11.30 am	Prof A.M. Attygala	Changing phases in Orthognathic Surgery
11.30 am -12.30 pm	Prof Gurkeerat Singh	Understanding the Damon Appliance
12.30 pm - 1.15 pm	Lunch	
1.15 pm - 2.15 pm	Prof N.R. Krishnaswamy	Orthodontics and Bioesthetics: A Perfect Symbiosis
2.15 pm - 3.00 pm	Dr Rabindra Man Shrestha	Adult Orthodontics: an evolving trend
3.00 pm - 3.45 pm	Dr Sumithra Hewage	Past, present and future of Orthodontics - four decades of seeking perfection
3.45 pm - 4.45 pm	Prof Gurkeerat Singh	The Damon Bracket selection & placement

INAUGURATION CEREMONY

02nd May 2022

6.30 pm	Arrival of the invitees
6.45 pm	Arrival of the chief guest and guest of honor
6.50 pm	National anthem
6.55 pm	Lighting of the oil lamp
7.00 pm	Welcome address by the president SLOS Dr R.K Dissanayake
7.10 pm	Address by the Guest of Honor Dr Priya Samaranyake
7.20 pm	Introduction of the chief guest
7.25 pm	Address by the Chief Guest
7.35 pm	Presentation of Past Presidents medal to Dr Paranthamalingam Immediate past President, SLOS
7.40 pm	Introduction of the Orator
7.45 pm	Dr Shanmuganathan Sivasubramaniam Oration by Dr Sriyani Basnayake, Consultant Orthodontist, Lady Ridgeway Children's Hospital, Colombo 08
8.45 pm	Vote of thanks by Secretary, SLOS
8.50 pm	Cultural show
9.00 pm	Fellowship dinner

CONFERENCE PROGRAMME - DAY 2

03rd May 2022

8.00 am - 8.30 am	Registration	
	Speaker	Topic
8.30 am - 9.30 am	Dr Eric Liou	Decipher Mandibular asymmetry for Orthodontic Rx with Orthognathic effect
9.30 am - 10.30 am	Dr Nikhilesh Vaid	
10.30 am - 11.00 am	Tea	
11.00 am -12.00 noon	Dr Mithran Goonewardane	Contemporary Challenges in Treatment Planning Skeletal Malocclusion Patients with a Surgery First Approach
12.00 noon - 1.00 pm	Prof Gurkeerat Singh	Damon & Elastics: Combination for Impact
1.00 pm - 2.00 pm	Lunch	
Free Paper session		
2.00 pm - 2.15 pm	Dr T M A Rodrigo	Management of anterior open bite with posterior intrusion using Orthodontic mini screws : a case report
2.15 pm - 2.30 pm	Dr K G A D Gamage	Management of an ectopically erupting Maxillary canine : A case Report
2.30 pm - 2.45 pm	Dr D D Vithanarachchi	Digital Planning in Orthognathic Surgeries
2.45 pm - 3.45 pm	Prof N.R. Krishnaswamy	Challenges and solutions for controlling the vertical dimension
3.45 pm - 4.30 pm	Prof Gurkeerat Singh	Class II correction made simple
4.30 pm - 4.45 pm	Tea	
4.45 pm - 5.45 pm	Prof Gurkeerat Singh	Damon & Elastics: Contd...
5.45 pm	Closing ceremony	



SPEAKERS' PROFILES
and
LECTURE SUMMARIES





Dr Grant McIntyre

BDS, FDS RCPS, MOrth, PhD, FDS(Orth), FHEA,
FDS RCS, FdI NHS

Consultant and Honorary Professor in Orthodontics
at the University of Dundee Dental Hospital &
School

EVIDENCE BASED ORTHODONTICS

We are all keen to deliver the best possible orthodontic care in our fascinating and continually evolving specialty. Every day, the fundamental principles of orthodontics are challenged and updated by research progress. Our journals carry papers with details of new techniques, products, devices and other papers comparing existing techniques. It is a key principle of good clinical practice that we incorporate new evidence in our treatment decisions but in the pursuit of perfection for our patients how often do we change our treatment protocols when new evidence emerges?

Furthermore, where do we find the best evidence and how do we separate the good from the bad? Evidence based Orthodontics is the future and this lecture will show delegates where to find new evidence and how to use it in daily orthodontic practice to produce the optimal results for our patients.



Dr Chetan Vijay Jayade

BDS, MDS, M Orth RCS

Consultant Orthodontist, Jayades Dental Care, Hubli
Director, CORE (Center for Orthodontic Research and Education)

CLASS II CORRECTION SIMPLIFIED WITH FIXED CLASS II CORRECTORS

Class II skeletal malocclusion is the most common among all skeletal problems with mandibular growth being faulty in almost 70 % patients. Mandibular advancement devices help in optimizing growth if used at the right time and for a sufficient long period.

Fixed Class II correctors overcome the challenges of compliance factor. With suitable clinical alteration to the Class II correction protocol, a more predictable Class II correction is possible with minimal lower incisor flaring.

This talk will address the following points -

- a) Newer paradigms in Class II correction
- b) Class II correction - common challenges
- c) Usage of Class II correctors with better biomechanical efficiency.



Dr A.M. Attygalla
BDS, MS, FDSRCS (Eng)
Chair Professor
Dept of Oral and Maxillofacial Surgery
Faculty of Dental Sciences
University of Peradeniya

CHANGING PHASES IN ORTHOGNATHIC SURGERY

Orthognathic surgery has come a long way since its early reports in the 19th century with remarkable refinements. It has offered a therapeutic solution to conditions such as obstructive sleep apnoea with a great success recently. The long time span for completion of orthognathic treatment is reduced considerably with modifications such as surgery first approach. Further, 3D printing, virtual surgical planning and patient specific implants (PSI) have led to enhanced accuracy and efficiency of the result for both the patient and the surgeon.



Dr Gurkeerat Singh

BDS, MDS

Professor and Head,

Department of Orthodontics and Dento-facial
orthopaedics,

Sudha Rustagi College of Dental Sciences and
Research, Faridabad, Haryana, India

UNDERSTANDING THE DAMON APPLIANCE

The Damon bracket and the appliance concept is very different from the convention bracket design and ligation method used till date in Orthodontics. This lecture aims to highlight the concept of the Damon appliance, discuss the Damon philosophy and show cases highlighting these concepts to achieve optimal results utilising least amount of chairside time as well as auxiliaries.

THE DAMON BRACKET SELECTION & PLACEMENT

The Damon appliance is the pioneer in the variable torque concept. Along with the variable torque brackets and the difference in the bracket design, there is sometimes a bit of confusion in the minds of the clinicians with regards to choosing the right torque bracket as well as where to place the bracket on the tooth surface for achieving optimal finishes. This lecture is aimed at enabling the clinician to choose the right prescription for an individual malocclusion and to demonstrate the variation in placement of these brackets on individual tooth surfaces in order to achieve great results with relative ease.

DAMON & ELASTICS: COMBINATION FOR IMPACT

Elastics are one of the oldest and the most predictable means of delivering consistent forces in Orthodontics. The combination of the Damon appliance along with elastics produces a synergistic effect and can resolve various mal-occlusions with relative ease. This lecture highlights the use of early elastics in various combinations to achieve great finishes.

CLASS II CORRECTION MADE SIMPLE

Class II dental relationship is a relatively common malocclusion. The relationship can be resolved rather easily if the diagnosis is proper, the patient is the right age and compliant. The treatment mode and impact becomes variable if the patient is compliant. The challenge so posed can be overcome by using appliances like the Advance Sync and TADs. The lecture highlights the use of such appliances to resolve complex malocclusions with relative ease.



Dr N.R. Krishnaswamy

BDS, MDS, M Orth RCS

Professor and Head Department of Orthodontics

Vice Principal of Ragas Dental College & Hospital,
Chennai, India

ORTHODONTICS AND BIOESTHETICS: A PERFECT SYMBIOSIS

“Bioesthetics, is the discipline in dentistry that studies the beauty of human beings in its natural forms and functions.” It is a process of continuous study that accepts the biologic form as its basis of function, diagnosis, and rehabilitation of the stomatognathic system.

The term “Bioesthetic dentistry” was coined to signify not only the union of, but also the inter-relationship between dentistry and biology.

Orthodontics deals with correction of dentofacial disharmony and addresses the esthetic and functional concerns of children and adults. With orthodontic treatment we strive to achieve better facial esthetics, dental esthetics, functional occlusion, periodontal health, and long-term stability.

These goals cannot always be met with orthodontic treatment alone, but with the help of Bioesthetics, we can now treat patients who have significant dental wear, slight skeletal discrepancies, and centric relation- centric occlusion discrepancies and still meet all our initial treatment objectives. This presentation will highlight with illustrative cases the principles of Bioesthetics and as to how it can augment the outcome of orthodontic treatment.



Dr Rabindra Man Shrestha
MSD (Orthodontics)
Professor and Principal
Kantipur Dental College,
Kathmandu University, Nepal

ADULT ORTHODONTICS: AN EVOLVING TREND

Traditionally, orthodontic service is rendered to adolescents. However, in recent years, the ratio of adults seeking orthodontic treatment is in rise because of aesthetic consciousness, advancement in appliance design, and economical independence in adults.

The treatment goals of adult orthodontic treatment are aesthetic enhancement, maintenance of periodontal health, improvement in functional and occlusal relationship. Adult orthodontics is generally carried as adjunctive treatment rather than comprehensive orthodontic treatment.

This presentation explains the trend of adult orthodontic practice in Nepalese context illustrating treatment principles and appliance modalities with case reports. The paper demonstrates various orthodontic modalities including the use of TAD, self-ligating system, aligners etc. The presentation also showcases the inter-disciplinary adult orthodontic treatment with restorative, prosthodontic and periodontic involvement.



Dr Sumithra Hewage

BDS Hons (Sri Lanka), FDS RCS(Ed),

D Orth RCS (Eng), M Orth RCS(Ed)

Consultant Orthodontist - NHS Highland, UK

Unit Clinical Director - Dept of Oral Maxillofacial
Surgery, Orthodontics & Restorative Dentistry at
Raigmore Hospital, Inverness, UK

PAST, PRESENT AND FUTURE OF ORTHODONTICS: FOUR DECADES OF SEEKING PERFECTION

The speciality of Orthodontics has seen advances not only in materials and techniques, but also a significant paradigm shift in the basis for treatment planning from occlusion to facial aesthetics based.

In an era of evidence - based clinical practice, we reflect on research that has underpinned major changes in our clinical practice with a view to answering the question “Are we there yet in seeking perfection in Orthodontics?”



Dr Eric Liou

DDS, MS

Associate Professor

Department of Craniofacial Orthodontics and
Graduate Institute of Craniofacial Medicine of Chang
Gung University, Taipei, Taiwan

A NEWER APPROACH: DECIPHER MANDIBULAR ASYMMETRY FOR ORTHODONTIC TREATMENT WITH ORTHOGNATHIC EFFECTS

A mandibular asymmetry could be due to the right and left side differences in condylar/ramal/mandibular body size, morphology, condyle position in TMJ or combination of the above. Improvement of mandibular asymmetry had been considered not possible merely through orthodontic treatment.

Interestingly, we found recently in some patients their mandibular asymmetry could be improved orthodontically with certain degree of orthognathic effects after correction of occlusal cant or by application of the bite raisers or slopes, although the results varied from patient to patient. Due to the varied treatment results, the current unsolved question in orthodontic managements for improving mandibular asymmetry without jaw surgery is who are the indications.

The purpose of this presentation is to decipher the orthodontic indications for improving mandibular asymmetry through meticulous dissection of the causes of mandibular asymmetry, to illustrate the orthodontic mechanics and appliances for the improvements, and to exam the adaptations of the mandibular condyle during and after orthodontic treatment.



Dr Nikhilesh R Vaid

BDS, MDS, Ph D

President, World Federation of Orthodontists

CLASS IIS AND GROWTH MODULATION- SO NEAR YET SO FAR!

Growth modulation for Class II treatment in growing patients is a treatment option that has been proposed and tested on the Evidence parameters in orthodontic literature. Scholarly literature answers a few questions while posing many more unanswered ones. This presentation will look at clinical questions that arise in decision making with the available evidence and aim at seeking evidence based solutions for those!



Dr Mithran Goonewardene

BDS (West.Australia), MMedSc (Harvard), Cert.Ortho(Harvard)
Head of Orthodontics and Graduate Program
Director,
University of Western Australia

CONTEMPORARY CHALLENGES IN TREATMENT PLANNING SKELETAL MALOCCLUSION PATIENTS WITH A SURGERY FIRST APPROACH

Consensus management of combined surgical orthodontic problems firstly involves removing dental compensations prior to surgical repositioning of the jaws. Planning of combined surgical orthodontic cases with the surgery first technique on the other hand is challenging when accurate repositioning of the jaws is complicated by the variety of dental compensations that will need to be addressed post-surgery.

Clinicians have progressively engaged the realms of computer science in diagnosis and treatment planning that now extends to accurate techniques to guide the jaws into the desired positions intraoperatively. Dr Goonewardene will present an update of contemporary methods currently used to accurately reposition the jaws to the desired positions and the implications that these procedures have on the surgery first technique. Moreover, the outcomes of both single jaw mandibular advancement and two jaw surgical repositioning for management of Class II and Class III malocclusion will be shown.



Dr N.R. Krishnaswamy

BDS, MDS, M Orth RCS

Professor and Head Department of Orthodontics

Vice Principal of Ragas Dental College & Hospital,

Chennai, India

CHALLENGES AND SOLUTIONS FOR CONTROLLING THE VERTICAL DIMENSION

In the past, the focus in orthodontics has been on correcting the anterior-posterior skeletal and dental relationships. Not surprisingly, the current and widely used system of Angle's classification focuses primarily on the sagittal with very little focus on transverse or vertical dimension problems. It took decades before pioneering orthodontists highlighted the importance of vertical facial dimension.

Distortions in vertical proportions have a greater negative impact on facial aesthetics as compared to sagittal and transverse dimension problems. The vertical facial pattern gets established early in life and needs therapeutic intervention.

Although the vertical dimension lends itself to mechanical control alteration in vertical pattern itself is difficult and instability following treatment is a veracious issue. The distortion in vertical skeletal pattern can be two extremes:

- a) Vertical excess
- b) Vertical deficiency and sometimes the accompanying malocclusion maybe in the opposite direction. Most often, inappropriate treatment plan, compromised goals and faulty mechanics can make the result in the outcome much worse than the original problem.

The objective of this presentation is to highlight the hard and soft tissue parameters characteristic of vertical facial pattern and the challenges and solutions in controlling the vertical dimension to optimize facial and dental aesthetics.

LEARNING OBJECTIVES:

- a) Recognition and quantifying vertical excess and deficiency
- b) Collaborating vertical structural problem with smile aesthetics
- c) Treatment strategies
- d) Appliance selection and retention period
- e) Adjunctive procedures



ABSTRACTS OF FREE PAPERS



MANAGEMENT OF ANTERIOR OPEN BITE WITH POSTERIOR INTRUSION USING ORTHODONTIC MINI SCREWS: A CASE REPORT

T.M.A. Rodrigo*, W.B.M.C.R.D. Weerasekera

Division of Orthodontics, Department of community Dentistry, Faculty of Dental Sciences, University of Peradeniya, Peradeniya, Sri Lanka.

Abstract

Anterior open bite is a malocclusion in which there is no vertical overlap in the anterior teeth in full occlusion. Management of an anterior open bite can be complex and challenging. Accurate diagnosis is essential for proper management.

Posterior teeth intrusion is one of the main treatment modalities which is more stable than any other orthodontic treatment approaches. Posterior intrusion with orthodontic mini screws or Temporary Anchorage Devices (TADs) has simplified the treatment of an anterior open bite with proven effectiveness. Compared to the other intrusion methods mini screws are relatively simpler to insert, less traumatic, require almost no patient cooperation. Immediate loading and cost effectiveness are also well-known advantages.

This case report describes the management of a 16-year-old female patient having a chief complaint of a gap between upper and lower anterior teeth on biting. The patient was treated on extraction basis using 0.022 slot MBT preadjusted edgewise appliance and posterior intrusion with two bilateral orthodontic mini screws (1.5 mmx 8mm size). It accompanied an anterior open bite appliance with bilateral posterior bite planes splinted on to the upper posterior teeth and two metal bars connecting the bite planes. An intrusive force was applied to the mini screws on the buccal side. The 3mm anterior open bite was corrected after 7 months of intrusion and achieved a positive overbite and a harmonious facial profile.

MANAGEMENT OF AN ECTOPICALLY ERUPTING MAXILLARY CANINE – A CASE REPORT

K.G.A.D. Gamage^{1*}, S.L. Pathirage²

¹Senior Registrar in Orthodontics, Teaching Hospital, Karapitiya.

²Consultant Orthodontist, Teaching Hospital, Karapitiya.

A tooth that locates away from the normal position is considered as an ectopic eruption. Ectopic maxillary canine is a rare condition but it can create problems if left untreated.

The orthodontic treatment of an ectopically erupted maxillary canine is a challenging situation.

This is because the orthodontic mechanisms that are applied to align the tooth are complex and if not properly executed can lead to damage of roots of the tooth and its supporting structures. Furthermore, the treatment takes longer than the average orthodontic treatment and greater financial burden to the patient.

This case report describes the management of a 15 year old boy presented to the Orthodontic Clinic with the chief complaint of palatally erupting tooth. On clinical examination patient was diagnosed with Class I malocclusion with an ectopically erupting maxillary right canine palatal to the right second premolar, over retained upper right deciduous canine and diminutive upper lateral incisors. He was successfully treated with upper and lower pre-adjusted edgewise appliances.

DIGITAL PLANNING IN ORTHOGNATHIC SURGERIES

D.D. Vithanachchi¹*, V.S.N. Vithanarachchi², U.G.C. Sankalpa³,
M. Attygala⁴

¹Lecturer (probationary), Division of Orthodontics, Faculty of Dental Sciences, University of Peradeniya.

²Professor in Orthodontics, Orthodontic Unit, Faculty of Dental Sciences, University of Peradeniya.

³Senior Registrar in OMFS, OMF Unit, Dental Hospital Peradeniya, Peradeniya.

⁴Professor in OMFS, OMF Unit, Faculty of Dental Sciences, University of Peradeniya.

Orthognathic surgery involves the surgical manipulation of the elements of the facial skeleton to restore the proper anatomic and functional relationships in patients. Orthognathic surgeries indicate when patients with dentofacial skeletal anomalies are too old for growth modification treatment and too severe for orthodontic camouflage. Furthermore, airway issues including sleep apnea, and TMJ disorders were also possibly managed with the aid of orthognathic surgeries.

Management of these patients needs an interdisciplinary approach involving expertise in Oral and Maxillofacial Surgery and Orthodontics.

Accurate orthognathic surgical planning is complex and time-consuming. The current conventional system includes cephalometric paper surgery followed by facebow recording and model surgery to construct handmade acrylic occlusal splints. With the advanced technologies and the innervations of 3D scanning, CBCT imaging, and 3D printing technologies, computer-aided design and computer-aided manufacturing (CAD/CAM) of occlusal splints are taken up the traditional orthognathic surgical planning in the modern world. With the introduction of these modern technologies, drastic uplifting in accuracy, predictability, and the outcomes of orthognathic surgeries are evident in many parts of the world.

This paper describes the pre-surgical orthodontics, and steps in CAD-CAM-based orthognathic surgical planning and the use of 3D printed occlusal splints in a 23-year-old female patient who was successfully treated with the combined effort of the orthodontic and oral and maxillofacial surgical team at the faculty of dental sciences, Peradeniya, Sri Lanka.



**ABSTRACTS OF POSTER
PRESENTATION**



CRANIOFACIAL DISTRACTION OSTEOGENESIS

B.D.M.C. Gunaratne

Orthodontic Unit, Lady Ridgeway Hospital for Children, Colombo,
Sri Lanka.

Distraction Osteogenesis is a method of biologically creating new bone following an osteotomy and progressive mechanical separation of bony segments.

Distraction was introduced by Codevilla. Later, Ilizarov invented the Ilizarov apparatus for the

lengthening of long bones in 1951 and is considered the father of modern distraction osteogenesis. Indications for distraction osteogenesis of the craniofacial region include craniofacial anomalies, facial clefts, severe sleep apnoea, hemifacial microsomia, and widening of the mandible anteriorly when the symphysis area is deficient in width. However, this is not indicated for patients with inadequate bone structure.

Initially, the bone is sectioned surgically and a latency period of 5-7 days is allowed for the

development of a callus. The distraction phase follows this, with stretching of the callus in a gradual, controlled manner using a distraction device. Distraction is usually done at a rate of 1 mm per day. The application of traction force stimulates the new bone formation. Once sufficient lengthening has been obtained, the device is left in place and a consolidation period is allowed whilst the bone matures and remodels.

This procedure has many advantages compared to orthognathic surgery, such as the possibility of

greater bony movements, gradual soft tissue stretch and soft tissue adaptation, avoidance of bone

grafts, suitability for both growing and non-growing patients, and lower surgical risks. However, as with any other technique, this too has a few disadvantages, for example, complex treatment planning and a second surgery being required to remove the distraction device.

AN INDEX FOR PATIENT PRIORATIZATION FOR ORTHODONTIC TREATMENT IN PUBLIC HEALTH CARE SECTOR IN SRI LANKA

S.D. Herath*, W.M. Senadeera

Orthodontic Unit, National Dental Hospital (Teaching), Colombo 07,
Sri Lanka.

An Index is a tool which is used to provide a numerical value describing a status of a case on a graded scale. In Orthodontics, indices are used in diagnosis, assessing treatment need, severity, complexity and treatment outcome.eg; Angle's classification, Littles irregularity index, IOTN, PAR index.

An index should be valid, reliable, simple, acceptable to profession and public

Available facilities and the affordability of the cost in providing free orthodontic treatment is limited in public healthcare system. To be fair by the all patients and cost effective for the system, there should be a common method for patient selection and prioritization to be used in every center in the system. Currently, there is no such index being used for this purpose uniformly in all the centers.

Index of orthodontic treatment need (IOTN) is being used in some countries for the above purpose. This index was described by Brook and Shaw (1989) and was modified by Richmond (1990). This was developed and tested in England for their population. It is understood that, there can be differences in presentation of malocclusions, their prevalence and perception of effect of malocclusion among countries and communities. When selecting and prioritization for treatment it is important that we address the need of our population and practicality within our health care system.

The main objectives in this presentation is to introduce a criterion which can be used in Sri Lankan government funded health care system in order to provide best possible benefit for the needy patients and effectively utilize the available resources.

AN AUDIT ON REPAIRS AND REPLACEMENTS OF ORTHODONTIC REMOVABLE APPLIANCES AT THE ORTHODONTIC LABORATORY, NATIONAL DENTAL HOSPITAL (TEACHING), SRI LANKA.

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Introduction

Removable orthodontic appliance breakages are a common drawback during removable appliance therapy which adds an additional workload to the routine laboratory work to repair and replace them. Information from this audit can be used to overcome this problem and to provide more efficient treatments for the patients.

Objectives

To assess the abundance of repairs and replacements of orthodontic removable appliances at the orthodontic laboratory, NDHT, Sri Lanka.

Methods

This audit was carried out for damaged removable appliances for a period of 06 months from October 2019 to March 2020.

Results

A total of 84 cases were presented in 06 months which accounted for 12.5% of the total workload. The male to female ratio was 1:1. Out of 84 cases 4 cases needed replacement with new appliances (4.4%) while repaired appliances accounted for 95.6%. The highest rate of breakages were reported among the age group of 12-15year (59.5%) followed by 16-19-year (21.4%) and older than 20-year (19%). Majority of the cases (69%) were repaired for the first time and 2nd and 3rd time repairs accounted for 19% and 8.3% respectively. Most commonly repaired component was Adams clasp (47%) followed by labial bows (41.6%) and Cleats (3.5%). Base plate repairs (2.3%) were the least reported out of total repairs.

Discussion and Conclusions

Audit results suggest that there is an inclusion of additional burden on routine laboratory work, and it is recommended to improve post appliance delivery instructions particularly for 12-15 age category. Furthermore technical officers should improve the quality of the appliance construction specially on Adams clasps and labial bows.

After 3 months time reaudit will be carried out to assess the effectiveness of the recommended actions.

MID MAXILLARY OSTEO-DISTRACTION - A VIABLE OPTION TO TREAT OBSTRUCTIVE SLEEP APNOEA IN CLEFT PATIENTS (A CASE REPORT)

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Introduction

Maxillofacial and oropharyngeal anatomy critically contribute to the pathophysiology of obstructive sleep apnoea (OSA) in many cleft patients. Maxillary constriction coupled with decreased oral cavity volume increase nasal airway resistance in these patients. Treatment for OSA are mainly medical and surgical.

The current gold standard medical treatment is continuous negative airway pressure (CPAP) and the compliance has reported to be poor. Surgical treatment is the other scope of management and provides a possibility of permanent cure.

Objective

This case report presents a specific cleft patient with severe OSA symptoms who showed complete disappearance of associated symptoms after doing Mid-Maxillary Osteo-distraction (MMOD) as a part of secondary cleft management.

Case presentation

A 16-year-old obese girl (BMI 51) with severe class III malocclusion and cleft lip and palate was a known patient having severe OSA symptoms including loud snoring, hypersomnia, mood disturbances and bed wetting.

Patient was surgically treated with MMOD to improve facial profile and OSA symptoms were completely disappeared after distraction.

Discussion

The decision to apply MMOD for advancement of maxillary bone in cleft patients offers many advantages. In this case report, complete disappearance of OSA symptoms was noticed after MMOD and her quality of life improved.

Increased nasal cavity volume decreases nasal airway resistance and allows the tongue to protrude forward and upward thus expanding the posterior pharyngeal airway space during sleep reduces OSA symptoms.

Conclusion

MMOD appears a safe, highly effective treatment for OSA in this cleft patient with a promising outcome. Further studies are needed to assess outcomes of MMOD thoroughly in the long term and to identify which OSA patient would benefit most from MMOD.

Key words

Obstructive Sleep Apnoea (OSA), Mid- Maxillary Osteodistraction (MMOD), Continuous Positive Airway Pressure (CPAP).





POST-CONFERENCE WORKSHOP

4th May 2022





Dr Chetan Vijay Jayade

BDS, MDS, M Orth RCS

Consultant Orthodontist, Jayades Dental Care, Hubli
Director, CORE (Center for Orthodontic Research and Education)

APPLIED BIO MECHANICS IN CONTEMPORARY ORTHODONTICS

Advanced Biomechanics course

- Lecture 1 - Revisiting the Fundamentals of Biomechanics
- Lecture 2 - Geometry X- A new wire bracket geometry
- Optional lectures - increasing efficiency on leveling and aligning stages
- Lecture 3 - Understanding Biomechanics of TAD's and Fixed Functional Appliances
- Lecture 4 - Amalgamation of Boxed Auxiliaries in Pre Adjusted Appliances

Hands on -

- Geometry X design
- Mulligan's Intrusion arch design
- Bimetric design for molar distalization
- Boxed auxiliaries for efficient root control



ACKNOWLEDGEMENTS



ACKNOWLEDGEMENTS

- **Chief Guest** – Dr Asela Gunawardena, Director General of Health Services, Sri Lanka
- **Guest of Honor** – Dr Priya Samaranayake, Senior Consultant (Retired) and Head , Orthodontic Unit, Dental Institute, Colombo; Founder Member Sri Lanka Orthodontic Society.
- **Orator** – Dr Sriyani Basnayake, Consultant and Head, Orthodontic Unit, Lady Ridgeway Children’s Hospital, Colombo, Sri Lanka.
- **International speakers** – Dr Chetan Jayade (India), Prof. Grant McIntyre (UK), Prof. Gurkeerat Singh (India), Dr N R Krishnaswamy (India), Dr Rabindra Man Shrestha (Nepal), Dr Sumithra Hewage (UK), Dr Mithran Goonewardene (Australia), Dr EricLiou (Taiwan), Dr Nikhilesh R Vaid (India)
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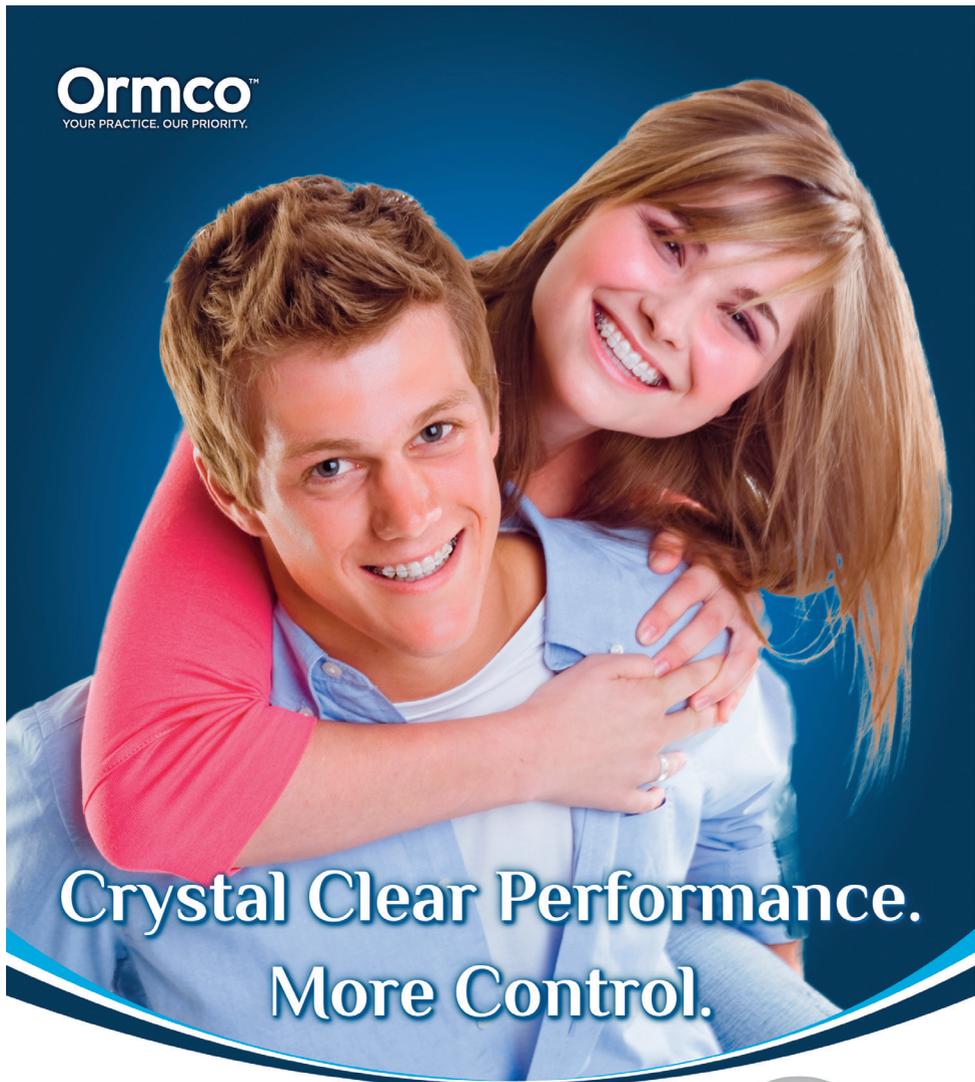
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