BVMKA-HH / ABCOMF-TC AUTUMN MEETING 2025

"OBSTRUCTIVE SLEEP APNEA SYNDROME"

Belgian Society of Oral & Maxillo Facial Surgery
Head & Neck

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1.WELCOME

AUTUMN MEETING 2025

Dear colleagues,

Welcome to this specialized congress dedicated to Sleep Apnea Syndrome in the field of Maxillofacial Surgery. As the impact of obstructive sleep apnea (OSA) on overall health becomes increasingly recognized, the role of Maxillofacial surgeons in providing effective, long-term solutions is more crucial than ever.

This congress brings together leading experts to discuss cutting-edge surgical techniques, patient outcomes, and interdisciplinary approaches to managing sleep apnea. From innovative advancements in maxillomandibular surgery to the latest research in airway management, we will explore the future of surgical interventions for this widespread yet underdiagnosed condition.

We are honored to feature a distinguished panel of keynote speakers:

- **Professor R. POIRRIER:**
  - *The Medical History of Obstructive Sleep Apnea Syndrome: Diagnosis and Treatment.*
- **Prof.S. RASKIN:**
  - *The Screening by the orthodontist of phenotypes predisposing to sleep apnea.*
- **Prof. Jean-Louis PEPIN:**
  - *New clinical pathways for the management of obstructive sleep apnea.*
- **Prof. O. Vanderveken:**
  - *Hypoglossus stimulation in OSAS therapy*

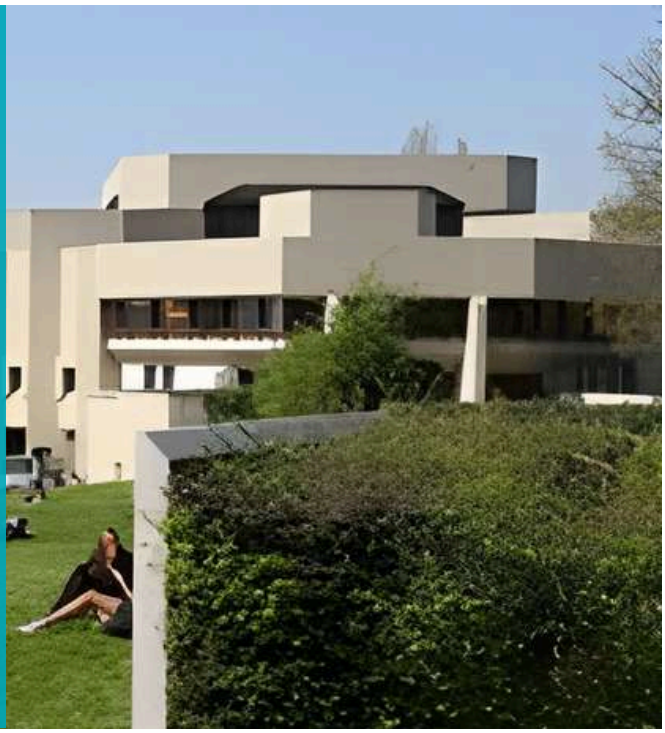
Thank you for joining us. We look forward to an inspiring and forward-thinking day!

Yves GILON
President ABCOMF-TC/BVMKA-HH

2.VENUE

21 november
University of Liège

Auditorium EXEDRE
Campus du Sart Tilman - B8
Quartier AGORA
L'Agora 1, 4000 Liège



22 november
Palais des Congrès

Esp. de l'Europe 2
4020 Liège

3.OUR PARTNERS

4. PROGRAM

4.1. FRIDAY

14.00h – 14.10h: Welcome
14.10h - 15.00h:
New nomenclature in OMFS: nearly in force. Where are we today?
Prof. Em. KUL C. POLITIS, president of GBS-VBS
15.00h – 15.40h:
E-billing and transparency codes (Dental and Medical)
E. DENYS - Mediris
15.40h – 16.10h: Coffee
16.10h – 17.45h:
The future of Health Care in Belgium.
Debate by medical Press Journalist V.LIEVIN to G.L. BOUCHEZ (president MR)
17.45h-18.00h : Pause
18.00h - 18.45h : Minirecital by Conservatoire de Huy
19.00h : End of session
20.00h – 22.30h: GALA DINNER – Restaurant RIVA

4.2. SATURDAY

08h45 – 09h00 : Welcome
09h00 – 09h45 : Keyspeaker: Professor R. POIRRIER
Founder and emeritus head of sleep lab, CHU de Liège, Belgium.
"The Medical History of Obstructive Sleep Apnea Syndrome : Diagnosis and Treatment."
09h45 – 09h55 : Discussion
09h55 – 10h05 :
Jaumotte M, Le Clercq M, Poirrier R, Raskin S, Gilon Y. CHU de Liège, Belgium.
"Surgical history of OSAS: from tracheotomy to bimaxillary advancement."
10h05 – 10h15:
De Craemer, E.[1], De Poortere, A.[1], Van Loon, B.[21] University Hospital Leuven[2] Elisabeth-TweeSteden Hospital Tilburg.
"The Impact of Modified Genioplasty in the Treatment of Obstructive Sleep Apnea Syndrome (OSAS)."
10h15 – 10h25:
Jaumotte M, Raskin S, Le Clercq M, Poirrier R, Gilon Y. CHU de Liège, Belgium.
"Towards a new cephalometry for sleep apnea syndromes?"
10h25 – 10h35: Bruwier A., orthodontic department, CHU Liège, Belgium.
"Should teeth be extracted in cases of obstructive sleep apnea?"
10h35 – 10h45: Discussion
10h45 – 11h15: Coffee
11h15 – 11h45: Keyspeaker: Associate Prof.S. RASKIN :
Orthodontic department, Centre d'étude des troubles de l'Eveil et du Sommeil, CHU de Liège, Belgium.
"*The Screening by the orthodontist of phenotypes predisposing to sleep apnea."*
11h45 – 11h55: Discussion
11h55 – 12h05: Jaumotte M, Le Clercq M, Poirrier R, Raskin S, Gilon Y. CHU de Liège, Belgium.
"*Operative decision criteria for sleep apnoea syndrome: retrospective and prospective review of 20 years of Liege sleep surgery. Part 1*"

12h05 – 12h15:
Jaumotte M, Le Clercq M, Poirrier R, Raskin S, Gilon Y. CHU de Liège, Belgium.
"Operative decision criteria for sleep apnoea syndrome: retrospective and prospective review of 20 years of Liege sleep surgery. Part 2"
12h15 – 12h25:
Araceli Diez-Fraile[1-2], Neyt N.[1-3], Rojas-Sánchez R.[4], Martínez J.P.[5], Gabrielli M.[6], Gerbino G.[7], Segura I.[8], Giralt M.[9], Hernández-Alfaro F.[9], Salman S.[10], Barrera J.[11], Swiergol M.[11], MKA AZ Sint-Jan Brugge.

[1]Department of Maxillo-Facial Surgery, Department of Surgery, AZ Sint-Jan Brugge, Rudderschove 10, 8000 Brugge, Belgium
[2]Clinical Research Scientist, Clinical Trial Center, AZ Sint Jan Brugge, Ruddershove 10, 8000 Brugge, Belgium.
[3]Department of Maxillo-Facial Surgery, Department of Surgery, AZ ZENO, Kalvekeetdijk 260, 8300 Knokke, Belgium.
[4]Head and Neck and Maxillofacial Surgery Unit,
Clínica Santa María, Santiago, Chile.
[5]Maxillofacial Surgery, Universidad Andrés Bello, Santiago, Chile.
[6]Emergency Unit, Clínica Santa María, Santiago, Chile.
[7]Department of Diagnosis and Surgery, Oral and Maxillofacial Surgery Division Araraquara Dental School,
São Paulo State University, Brazil.
[8]Maxillofacial Surgery, Città della Salute e Della Scienza,
University of Torino, Italy
[9]Maxilofacial Institute, Teknon Hospital, Barcelona, Spain.
[10]Partner, Atlanta Oral & Facial Surgery, Emory University Department of Surgery, Atlanta, GA, USA.
[11]Texas Center for Facial Plastic and Laser Surgery, San Antonio, Texas, USA.
"Multicenter outcomes and predictors after maxillomandibular advancement for obstructive sleep apnea."
12h25 – 12h35:
Z. Mokhtari, X. Vanden Eynden, C. Gossiaux, M. Lalmand, R. Javadian, D. Dequanter, I. Loeb, E. Boutremans, CHU Saint-Pierre, ULB, Brussels, Belgium.
"Maxillomandibular Advancement Surgery in the Treatment of Obstructive Sleep Apnea : A 10-Year Retrospective Study."
12h35 – 12h45: Discussion
12h45 – 13h00: Award Ceremony for the Best Presentation Prizes 2023-2025
13h00 – 14h00: Lunch

14h00 – 14h30: Administrative Session

14h30 – 15h00: Keyspeaker: Prof. Jean-Louis PEPIN:

Head of the Clinic of Physiology, Sleep and Exercise at Grenoble University hospital, France.

"New clinical pathways for the management of obstructive sleep apnea."

15h00 – 15h10: Discussion

15h10 – 15h20: CHU Saint-Pierre and Centre Epicura

C. Legrain, X. Vanden Eynden, C. Gossiaux, M. Lalmand, R. Javadian, D. Dequanter, I. Loeb, E. Boutremans, CHU Saint-Pierre, ULB, Brussels, Belgium.

"Mandibular Advancement Device in the Treatment of Obstructive Sleep Apnea: 10-year Retrospective Study."

15h20 – 15h30:

B. Winter[1], A. Zarrinpour[2], A. Belattar[3], JM. Mauclaire[41]

Airway.no, Oslo, Norway [2]Clinique du Sourire, Paris, France

[3]Polyclinique de la Roseraie, Aubervilliers, France.

[4]Tongue Lab, Paris, France

"Impact of Neurofunctional tongue stimulation with the Tongue Right Positioner on OSA, O2 saturation and upper airways stability"

15h30 – 15h40:

Zandra Milena Miranda Cuero[1], Elke Van de Casteele[1-2-3], Luc Marks[1], Herman Jr Vercruysse[1-2-3], W. De Vos[1-2-3], N. Nadjmi[1-2-3], P. Corthouts[2], D. Dielen[2], D. Govaerts[2], J. Jonkergouw[2], L. Renier[2], S. Stevens[2], J. Van de Perre[2], M. Van Genechten[2], G. Van Hemelen[2], F. Vanhove[2], P. Winderickx[2].

[1]Department of Cranio-Maxillofacial Surgery, Antwerp University Hospital, Belgium.

[2]ZMACK / Associatie MKA, AZ Monica Antwerp, Belgium.

[3]Faculty of Medicine & Health Sciences, University of Antwerp, Belgium.

"Can palatal expansion improve outcomes in obstructive sleep apnea?"

15h40 – 15h50: C. Dauchot, X. Vanden Eynden, C. Gossiaux, M. Lalmand, R. Javadian, D. Dequanter, I. Loeb, E. Boutremans, CHU Saint-Pierre, ULB, Brussels, Belgium.

"Transverse Maxillary Distraction in the Management of Obstructive Sleep Apnea: Functional and Aesthetic Outcomes."

15h50 – 16h00: discussion

16h00 – 16h20: Coffee

16h20 – 16h50: Keyspeaker: Prof. O. Vanderveken:

Full professor, Chair of the ENT Department, AZ Antwerpen.

"Hypoglossus stimulation in OSAS therapy."

16h50 – 17h00: Discussion

17h00 – 17h10: C. Kastoer[1-2], I. De Latte[2-3], R. Coopman[2-4].
[1]ENT surgeon, Ghent University Hospital.
[2]Multidisciplinary Sleep Clinic, Ghent University Hospital.
[3]Maxillofacial surgeon, General Hospital Sint Lucas Ghent.
[4]Maxillofacial surgeon, Ghent University Hospital.
"Maxillomandibular advancement surgery may not be suitable for eliminating supine dependent OSA and epiglottic collapse."

17h10 – 17h20:
L. Fontaine, M. Peters, F. Shall, C. Politis, M. Strauss, L. Evrard, R. Glineur.
Functional Unit for Sleep Disorders and Department of Stomatology, Erasme Hospital, Brussels, Belgium.
"Can DISE VOTE Classification Predict MAD Treatment Outcomes in OSA?"

17h20 – 17h30:
E. Grymonprez[1], B. Leyman[1], A. Diez-Fraile[1-2], J. Abeloos[3], T. De Backer[1-3-4], J. De Ceulaer[1-3-4], C. De Clercq[3], F. De Ketelaere[5], M. Desmedt[1-4], P. Lamoral[1-3-4], K. Nagy[1-6], K. Supply[5], C. Spaas[1-4], G. Swennen[1], B. Veys[1-3-5], N. Neyt[1-4].
[1]Department of Maxillo-Facial Surgery, Department of Surgery, AZ Sint-Jan Brugge, Ruddershove 10, 8000 Bruges, Belgium.
[2]Clinical Research Scientist, Clinical Trial Center, AZ Sint Jan Brugge, Ruddershove 10, 8000 Bruges, Belgium.
[3]Department of Maxillo-Facial Surgery, Department of Surgery, AZ Sint-Jan Brugge, Campus SFX, Spaanse Loskaai 1, 8000 Bruges, Belgium.
[4]Department of Maxillo-Facial Surgery, Department of Surgery, AZ ZENO, Kalvekeetdijk 260, 8300 Knokke, Belgium.
[5]Department of Maxillo-Facial Surgery, Department of Surgery, AZ Sint-Lucas, Sint-Lucaslaan 29, 8310 Bruges, Belgium.
[6]1st Department of Paediatrics, Semmelweis University School of Medicine, Budapest, Hungary.
"Validation of IPS Case Designer® for 3D CBCT-based Upper Airway Analysis in Patients with Obstructive Sleep Apnea."

17h30 – 17h40: M. Dhondt[1], B. Denoiseux[1], M. Ureel[1], L. De Kock[1], R. Coopman[1].
[1]Ghent University Hospital, Corneel Heymanslaan 10 -9000 Ghent, Belgium.
"*Analysis of Airway Maintenance After Maxillomandibular Advancement in Skeletal Class II Malformations Using an AI-Based 3D Autosegmentation Tool: One-Year Results in 40 Patients."*

17h40 – 17h50: Discussion and Closing Remarks

17h50: END

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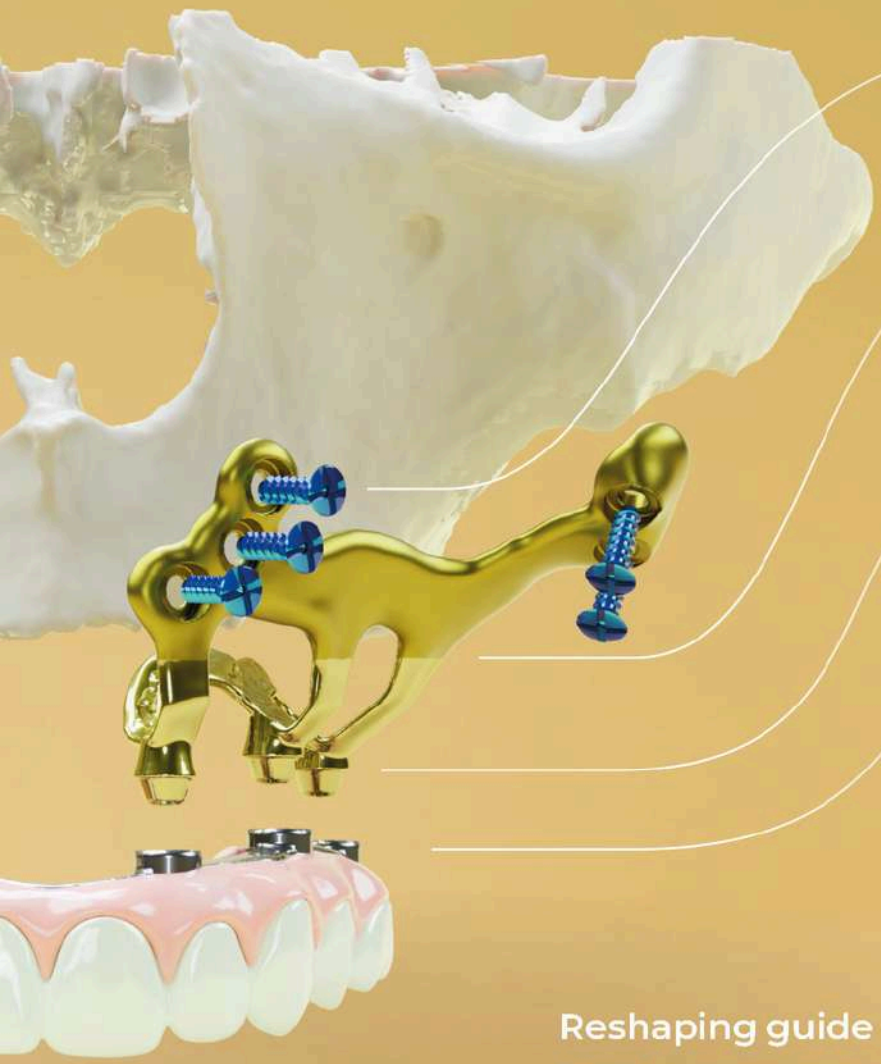

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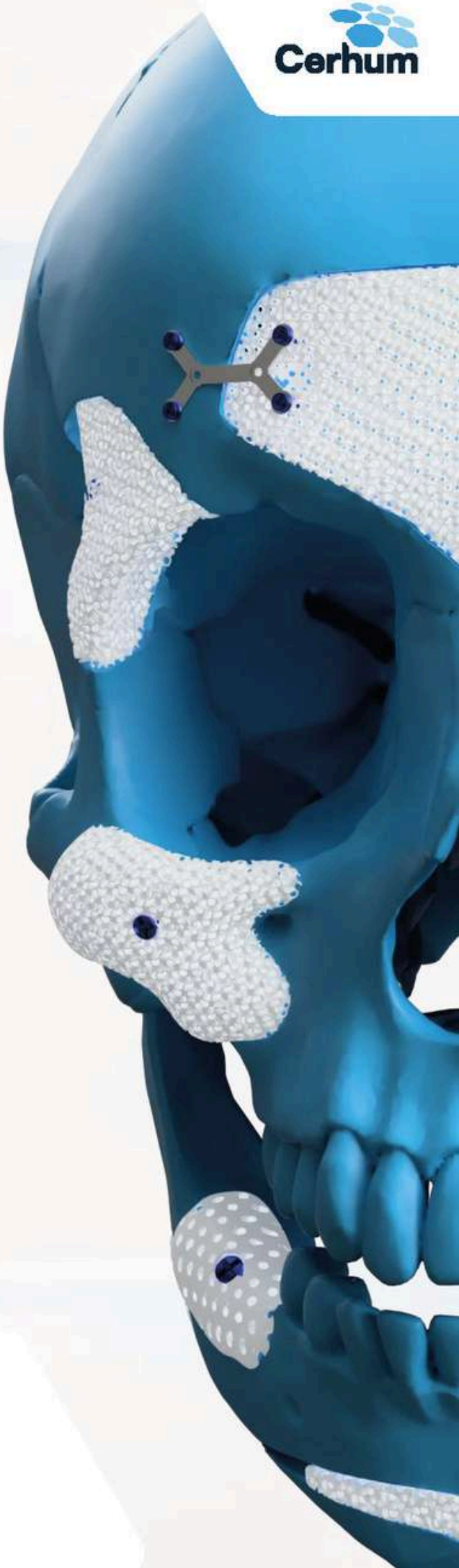

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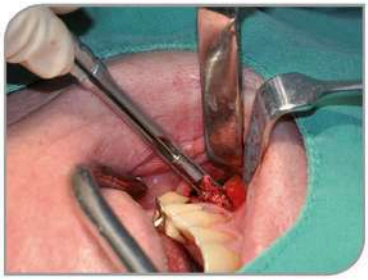
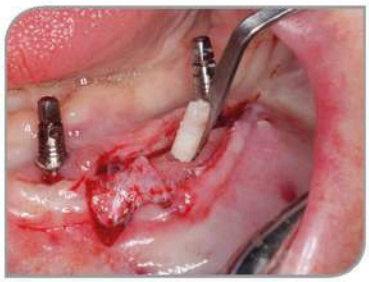

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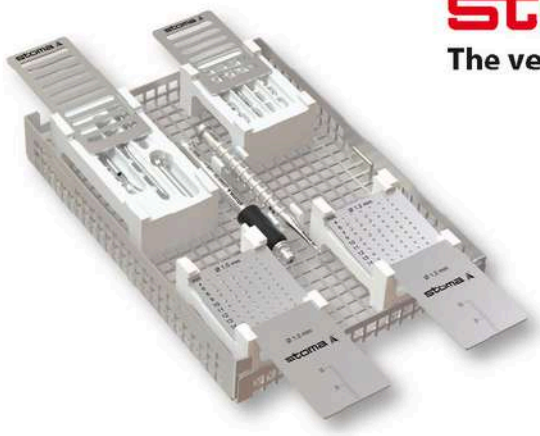

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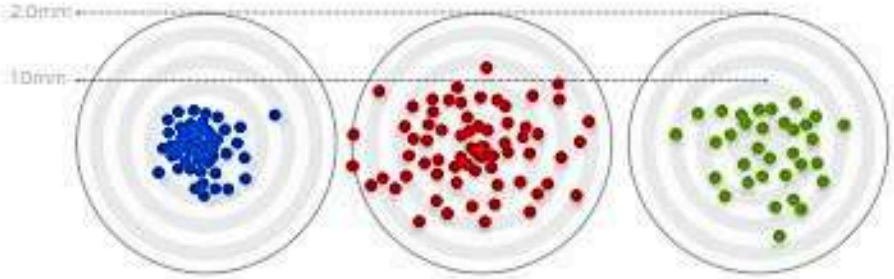

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1. Norton MR, Astrom M. The influence of implant surface on maintenance of marginal bone levels for three premium implant brands: A systematic review and meta-analysis. Int J Oral Maxillofac Implants 2020;35(6):1099-111 **2.** Thoma DS, Hass R, Sporniak-Tutak K, et. al. Randomized controlled multicentre study comparing short dental implants (6mm) versus longer dental implants (11-15mm) in combination with sinus floor elevation procedures. 5-Year data. J Clin Periodontol 2018;45(12):1485-74

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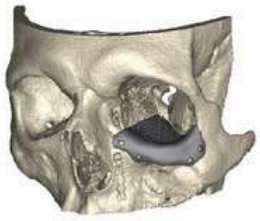
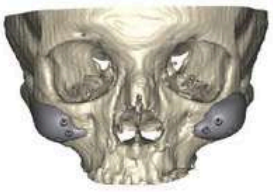


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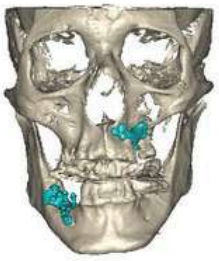

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AUDITORIUM EXEDRE - CAMPUS DU SART TILMAN - B8

NOVEMBER 21ST, 2025

18H00

5. MINIRECTIAL

5.1 PROGRAM

- **Waldzenen, op.82 - R. Schumann**
  - 1. Eintritt
  - 7. Vogel als Prophet
  - *Carlo Bennardo, piano*

- **Russian Suite - G. Chenderev**
  - 1. Contemplation
  - 3. Russian Dance
  - *Sandrine Grad, accordion*

- **Sonate Kk 98 in E minor - D. Scarlatti**
  - *Julie Leclercq, piano*
  - *Ernestine Mathieu, dance*

- **Trio Kegelstatt - W. A. Mozart**
  - 1st movement
  - *Nathalie Nicolet, violin*
  - *Marine Rouche, clarinet*
  - *Julie Leclercq, piano*

- **Four pictures from New York - R. Molinelli**
  - 2. Tango Club
  - *Matteo Messere, saxophone*
  - *Benoît Zandona, piano*

- **Hungarian Rhapsody N°2 - F. Lizst**
  - *Artur Burmistrov and Benoît Zandona, four hands piano*

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5.2 ABOUT THE ARTISTS

Carlo Bennardo starts learning piano at the age of 15, before enrolling at the Conservatoire de Huy with Samuel Fortemps. After two years of training and winning several prizes, he successfully passed the entrance exam to the Conservatoire Royal de Liège, where he is currently working to reach his goal: to become a piano teacher.

Sandrine Grad

Awakened to music by her parents from a very young age, Sandrine has been a student at the Conservatoire de Huy since she was 5 years old. From preparatory musical training to ensemble singing and rhythm, she experimented with several disciplines to finally fall in love with the accordion. She is now 17 years old and plans to continue her higher education with this instrument. She also learns the piano and shows the same passion and abilities.

Ernestine Mathieu began learning dance at a young age at the Conservatoire de Huy, in the class of her mother Carole Bodart. Classical, modern jazz - and contemporary dance at the Académie de Hannut – she follows in her mother's footsteps and intends to become a professional dancer. In 2024, Ernestine won the gold medal in junior category at the WCOPA in Los Angeles.

Julie Leclercq is an engineer in health and environmental risk assessment but dreamed of resuming her artistic career. Having obtained her secondary diploma in piano in 2002, she resumed classes in 2022 at the Conservatoire de Huy to prepare for higher education. Julie is admitted in 2024 to the Conservatoire Royal de Liège. She has also practiced, or still practices, classical dance, jazz dance, tap dance, cello and chamber music.

Nathalie Nicolet studied both violin and piano at the Conservatoire de Huy for numerous years. In 2023, she brilliantly completed her violin studies after a superb performance of the concerto Il favorito (Vivaldi) with the Orchestre de chambre de Huy. Recently, she has also shone in chamber music with her partners Julie and Marine, under the leadership of their teacher Pierre Heneaux.

Marine Rouche is a long-time student of the Conservatoire de Huy, where she first studied clarinet before starting a new course on the flute, which she will finish in June 2026. Specializing for many years in chamber music, she shares the stage with her partners in a discipline in which she is particularly experienced.

Matteo Messere studied saxophone at the Conservatoire de Huy in the class of Jean-Marc Lissens, before joining the Conservatoire Royal de Liège, then the Conservatorio Superior de Música de Murcia. Recently, Matteo won the first prize gold medal in the European Young Soloist Competition in Luxemburg and the first prize of the Gallego in Sax Competition.

Benoît Zandona began playing the piano at the age of 14. Initially destined for university studies, he left this path and entered the Conservatoire Royal de Liège under the aegis of Marie-Paule Cornia after four years of practice. He graduated with a master's degree in piano, a master's degree in piano with a didactic stream and a master's degree in accompaniment. He won the third prize in the international competition "Triomphe de l'art" in the "four hands" category.

Benoît is now Choirmaster of the choir ECHO MOSAN and currently professor of piano and accompanist at the Conservatoire de Huy.

Artur Burmistrov was born in Russia in 1987 and lives in Belgium since 1999. He entered the piano class of Marie-Paule Cornia at the Conservatoire de Huy and became a laureate of several national and international competitions: first prize at the Lion's Club competition (Namur), second prize at the Grétry competition (Liège), winner of the RTBF Competition "Young Musicians" (Brussels), first prize at the International Competition of Picardy (France), third prize at the International Competition "Rovere d'Oro" (Italy), first prize at the International Competition "Giovani Talenti" (Italy), second prize at the International Competition "Citta di San Gemini" (Italy), second prize and Rachmaninov Prize at the International Competition "Citta di Morcone", first prize at the Competition "Andrée Charlier" (Charleroi), first prize and first placed at the Dexia Classics Competition (Brussels), second prize at the Liège Piano Competition. He graduated with a master's degree in piano and a master's degree in piano accompaniment from the Conservatoire Royal de Liège, where he is now an accompanist.

ABSTRACTS

Saturday – 09h55-10h05

01.

Surgical history of OSAS: from tracheotomy to bimaxillary advancement

Authors:
Jaumotte M, Le Clercq M, Poirrier R, Raskin S, Gilon Y.

CHU de Liège, Belgium.

Abstract: The surgical treatment of sleep apnoea syndrome is nothing new.
From the invasive techniques of tracheotomy and glossoplasty to techniques involving the nasopharyngeal sphere and neck muscles, surgeons over the last 80 years have redoubled their ingenuity to counter this major pathology with its many physiological, economic and societal repercussions.
In this presentation, I will attempt to give you an overview of the surgical history of this disease, together with a brief technical explanation of each procedure and a review of the relevant publications.

Saturday – 10h05-10h15

02.

The Impact of Modified Genioplasty in the Treatment of Obstructive Sleep Apnea Syndrome (OSAS).

Authors:
De Craemer, E. [1], De Poortere, A. [1], Van Loon, B. [2]

1 University Hospital Leuven
2 Elisabeth-TweeSteden Hospital Tilburg

Keywords: Obstructive Sleep Apnea Syndrome, Modified Genioplasty, Orthognathic Surgery, Maxillomandibular Advancement (MMA), Sleep Medicine, Airway Optimization, Genioglossus Muscle, Surgical Technique

Objectives:
Obstructive Sleep Apnea Syndrome (OSAS) is a common condition that can have serious health consequences. Orthognathic surgery, particularly Maxillomandibular Advancement (MMA), has been shown to effectively improve airway patency in OSAS patients. This presentation explores the effectiveness of modified genioplasty as an adjunctive surgical technique to further improve the airway, with a particular focus on anatomical changes and the impact of genioglossus muscle and genial tubercle advancement.

Material and Methods:
The presentation will begin by discussing the principles of MMA, followed by an in-depth review of modified genioplasty, focusing on technical aspects such as genioglossus muscle advancement and genial tubercle repositioning. Important tips and techniques will be shared, including the use of piezoelectric surgery to create an autoretentive angle. Two case studies will be presented, with pre- and postoperative CBCT scans analyzed using IPS to assess airway changes following the surgery.

Results:
In the presented cases, a significant improvement in airway patency was observed following modified genioplasty. Postoperative CBCT scans revealed clear changes in airway anatomy, leading to improved respiratory function and reduced OSAS symptoms. The procedure had a positive effect on AHI scores and resulted in reduced daytime sleepiness. The use of genioglossus muscle advancement was particularly effective in enhancing upper airway stability.

Conclusion:
Modified genioplasty is a valuable adjunctive technique in the treatment of OSAS patients, especially when combined with other forms of orthognathic surgery like MMA. The technique provides a targeted approach to the mandible and airway, with good outcomes in improving respiratory function and alleviating sleep apnea symptoms. Further studies are needed to explore the long-term effects and optimal use of this technique in conjunction with other treatment modalities.

Saturday – 10h15 - 10h25

03.

Towards a new cephalometry for sleep apnea syndromes?

Authors:
Jaumotte M, Raskin S, Le Clercq M, Poirrier R, Gilon Y.

CHU de Liège, Belgium

Abstract: Through a historical and modern cephalometric review, combining 2D and 3D approaches, this presentation aims to demonstrate specific points related to SAOS that are not present in current computerised cephalometric programmes. We will search for these points, which are important for orthodontic-surgical treatment. Through a highly documented clinical case, whose transverse surgical management will be highlighted, we will quickly see that multidisciplinary collaboration is necessary to ensure optimal therapeutic guidance.

Saturday – 10h25 - 10h35

04.

Should teeth be extracted in cases of obstructive sleep apnea?

Authors:
Annick Bruwier,
Chef de service en orthodontie
CHU de Liège, Belgium

Abstract:
Lack of space due to narrow jaws often leads orthodontists to prescribe tooth extractions. It is unclear whether extractions predispose individuals to obstructive sleep apnea (OSA). It is more likely that narrow maxillae and mandibles and their low volumes, which motivate tooth extractions, are predisposing factors for OSA. Furthermore, this raises the question of tongue function in OSA. The question is therefore: can orthodontic treatment prevent OSA by widening the jaws ? In a recent cranio-facial comparative study of our group (Jadoul at al., Laryngoscope, 2025), 34 non-obese young adults (16 OSA patients and 18 controls) underwent orthodontic treatment. Both groups received comparable removable and/or fixed orthodontic appliances. Noteworthily, however, they differed in the number of premolars extracted during orthodontic treatment, with 6 subjects in the OSA group (37.5%) and none (0%) in the control group ($p<0.05$).

Saturday – 11h55 - 12h05

05.

Operative decision criteria for sleep apnoea syndrome: retrospective and prospective review of 20 years of Liege sleep surgery. Part 1

Authors:
Jaumotte M., Poirrier R., Raskin S., Leclerq M., Gilon Y.

CHU de Liège, Belgium.

Abstract:
Numerous studies have demonstrated the cure of sleep apnoea syndrome by bimaxillary advancement by analysing patients immediately post-operatively, and some case-reports report long-term cures.
Yet some of our patients relapse after a few years. Why do they do this?
Through a large-scale study in Liège, we set out to conduct an in-depth study of all patients who underwent bimaxillary advancement surgery between 1996 and 2016.
In this presentation, we will discuss the decision-making criteria in turn, as well as how to use them in consultation, in order to give the patient and the surgeon a better understanding of the surgical position for each patient and to be able to estimate the best possible surgical success.
We will conclude by discussing the limitations of these criteria, and our desire to create a future algorithm that will link them together in order to come as close as possible to clinical and operative reality.

Saturday – 12h05 - 12h15

06.

Operative decision criteria for sleep apnoea syndrome: retrospective and prospective review of 20 years of Liege sleep surgery. Part 2

Authors:
Jaumotte M., Poirrier R., Raskin S., Leclerq M., Gilon Y.

CHU de Liège, Belgium.

Abstract:
Numerous studies have demonstrated the cure of sleep apnoea syndrome by bimaxillary advancement by analysing patients immediately post-operatively, and some case-reports report long-term cures.
Yet some of our patients relapse after a few years. Why do they do this?
Through a large-scale study in Liège, we set out to conduct an in-depth study of all patients who underwent bimaxillary advancement surgery between 1996 and 2016.
In this presentation, we will discuss the decision-making criteria in turn, as well as how to use them in consultation, in order to give the patient and the surgeon a better understanding of the surgical position for each patient and to be able to estimate the best possible surgical success.
We will conclude by discussing the limitations of these criteria, and our desire to create a future algorithm that will link them together in order to come as close as possible to clinical and operative reality.

Saturday – 12h15 - 12h25

07.

Multicenter outcomes and predictors after maxillomandibular advancement for obstructive sleep apnea.

Authors:
Diez-Fraile, A. [1,2]; Neyt, N. [1,3] on behalf of the international collaborators on OSAS (Rojas-Sánchez, R. [4] ; Martínez, J.P. [5] ; Gabrielli, M. [6] ; Gerbino G. [7] ; Segura, I. [8] ; Giralt, M. [9] ; Hernández-Alfaro, F. [9] ; Salman, S. [10] ; Barrera, J. [11] ; Swiergol, M. [11]); "MKA Bruges".

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10 Partner, Atlanta Oral & Facial Surgery, Emory University Department of Surgery, Atlanta, GA, USA
11 Texas Center for Facial Plastic and Laser Surgery, San Antonio, Texas, USA

Keywords: obstructive sleep apnea; multicenter study; polysomnography; maxillomandibular advancement; outcomes; predictors

Objectives: Maxillomandibular advancement (MMA) is an established treatment option for obstructive sleep apnea (OSA). This study assessed real-world effectiveness and identified preoperative and procedural predictors of outcome across multiple centers.

Material and Methods: Retrospective cohort from seven oral and maxillofacial surgery units in six countries. Adults (≥16 years) with OSA confirmed by polysomnography (PSG; apnea–hypopnea index [AHI] ≥5) who underwent MMA (2010–2020) and had valid pre- and postoperative PSG were included. Primary outcomes, defined by Sher's criteria, were success (≥50% AHI reduction and postoperative AHI <20) and cure (AHI <5). Candidate predictors included demographics, body mass index (BMI), neck circumference, facial profile, preoperative PSG variables, maxillary and mandibular advancements, and occlusal plane rotation. Associations were tested with logistic regression

Results: Of 124 records, 116 met criteria. Median AHI fell from 32.3 to 4.2 events/h ($p < 0.001$), with parallel improvements in oxygen saturation nadir and arousal index (both $p < 0.001$). Postoperatively, 90.5% were classified as none/mild OSA. Cure was achieved in 56.0% and an additional 24.1% met success, for an overall success rate of 80.1%. Independent predictors of success were non-obesity and absence of at-risk neck circumference; greater baseline OSA severity also favored success. Predictors of cure were female sex and larger maxillary advancement; other perioperative variables had limited prognostic value.

Conclusion: Across diverse centers, MMA produced substantial PSG improvement (80% success; 56% cure). Simple preoperative factors (BMI, neck circumference, sex) and the extent of maxillary advancement help stratify candidates and may support more personalized treatment planning.

Saturday – 12h25 - 12h35

08.

Maxillomandibular Advancement Surgery in the Treatment of Obstructive Sleep Apnea : A 10-Year Retrospective Study.

Authors:
Z. Mokhtari, X. Vanden Eynden, C. Gossiaux, M. Lalmand, R. Javadian, D. Dequanter, I. Loeb, E. Boutremans,

CHU Saint-Pierre, ULB, Brussels, Belgium.

Introduction :
Obstructive sleep apnea (OSA) is a common disorder with significant cardiometabolic impact. When conventional therapies, such as continuous positive airway pressure (CPAP), fail or are poorly tolerated, maxillomandibular advancement (MMA) represents an effective surgical alternative. In young patients with craniofacial dysmorphosis, it may even be proposed as a first-line therapy.
Objective :
To present the outcomes of a 10-year retrospective study conducted at CHU Saint-Pierre, Brussels, evaluating the respiratory and functional efficacy of MMA in OSA patients.
Methods: A retrospective review was performed on patients who underwent MMA between 2013 and 2023. Pre- and postoperative data included apnea-hypopnea index (AHI), polysomnographic parameters, clinical characteristics, and perioperative complications.
Results :
MMA significantly reduced AHI and improved both objective and subjective sleep quality. Success and response rates
were high, while complications were limited and generally transient.
Conclusion :
MMA is a reliable and effective treatment for OSA. In young dysmorphic patients, it can be considered as a first-line therapy, reinforcing its central role in the management of severe OSA. Keywords: Obstructive sleep apnea – Maxillomandibular advancement – Orthognathic surgery – Retrospective study – Craniofacial dysmorphosis

Saturday – 15h10 - 15h20

09.

Mandibular Advancement Device in the Treatment of Obstructive Sleep Apnea : 10-year Retrospective Study at CHU Saint-Pierre and Centre Epicura

Authors:
C. Legrain, X. Vanden Eynden, C. Gossiaux, M. Lalmand, R. Javadian, D. Dequanter, I. Loeb, E. Boutremans,

CHU Saint-Pierre, ULB, Brussels, Belgium.

Introduction:
Mandibular advancement devices (MAD) are an established therapeutic option for obstructive sleep apnea (OSA), particularly in patients intolerant or non-compliant with continuous positive airway pressure (CPAP). Their effectiveness and tolerance in real-world clinical practice warrant evaluation.
Objective :
To present the outcomes of a 10-year retrospective study
(2013-2023) conducted at CHU Saint-Pierre, Brussels, and Centre Epicura, assessing the efficacy and tolerance of MAD in OSA management. Methods: Patients treated with MAD over the last 10 years were retrospectively reviewed. Data included changes in apnea-hypopnea index (AHI), clinical symptoms (daytime sleepiness, sleep quality), adherence, and adverse effects.
Results:
MAD therapy significantly reduced AHI, especially in patients with mild to moderate OSA. Subjective improvements in sleep quality and daytime alertness were observed. Overall tolerance was good, with limited and generally transient side effects (occlusal discomfort, initial mandibular soreness).
Conclusion :
MAD represents an effective and well-tolerated treatment for OSA. This
10-year retrospective study across two centers reinforces its role, particularly for mild-to-moderate OSA and in a personalized treatment approach. Keywords: Obstructive sleep apnea – Mandibular advancement device – Non-invasive treatment – Retrospective study – CHU Saint-Pierre – Epicura

Saturday – 15h20 - 15h30

10.

Impact of Neurofunctional tongue stimulation with the Tongue Right Positioner on OSA, O2 saturation and upper airways stability

Authors:
B. Winter [1], A. Zarrinpour [2], A. Belattar [3], JM. Mauclaire [4]

1 Airway.no, Oslo, Norway
2 Clinique du Sourire, Paris, France
3 Polyclinique de la Roseraie, Aubervilliers, France.
4 Tongue Lab, Paris, France

Introduction:
The Tongue-Right-Positioner (TRP) is an intraoral appliance that delivers neuro-functional stimulation of the tongue. By modulating tongue posture and motor control, as well as the activity of pharyngeal dilator muscles and the soft palate, TRP may reduce upper-airway collapsibility. Its effects are hypothesized to improve both obstructive respiratory events and oxygen desaturation during sleep.

Materials and Methods:
We conducted a multicenter, retrospective observational study in 37 patients with polysomnography confirmed OSA. Baseline (T0) and follow-up (T1) sleep studies were analyzed. The cohort included 12 severe, 18 moderate, and 7 mild OSA patients; 16 females and 21 males; mean age 53±10.8 years; BMI 24.7±4.0. The mean interval between T0 and T1 was 10.8±7.6 months. All patients reported full-night TRP use throughout the treatment period.

Results:
Mean AHI decreased from 28.0±14.9 (T0) to 12.0±8.8 (T1). Treatment response was observed in 30 patients (81%). A complete response (AHI ≤10/h) was achieved in 19 patients (51%), including 2 with baseline AHI ≥30. Partial response (≥50% AHI reduction but >10/h residual AHI) occurred in 11 patients (30%). 9 patients (24%) were poor responders. Supine AHI decreased from 34.6±21.3 to 22.1±15.7, and REM AHI from 27.6±12.2 to 18.6±9.2. Arousals were reduced from 21.9±10.8 to 13.3±6.4 events/hour. ODI improved from 17.7±15.1 to 11.0±8.7. Mean SpO2 increased from 93.4±2.1% to 94.5±1.6%. At baseline, 10% of patients had mean SpO2 <90% and 33% ≥95%; at T1, all patients exceeded 90%, and 48% were ≥95%.

Discussion:
Nightly use of the TRP device enhances phasic and tonic activation of the tongue and associated oropharyngeal muscles, thereby promoting nasal breathing, improving airway patency, and reducing collapsibility. The device may also augment inhaled nitric oxide admixture, contributing to improved ventilation–perfusion matching and higher oxygenation levels.

Conclusion:
The TRP demonstrated high compliance and comfort as a mono-maxillary oral appliance, significantly reducing AHI and ODI and improving oxygen saturation in OSA patients. The observed neuromuscular benefits underline the importance of considering tongue posture and hyoid–airway mechanics in long-term OSA management and surgical planning. TRP may serve as a valuable adjunct for functional stabilization before and after orthognathic procedures.

Saturday – 15h30 - 15h40

11.

Can palatal expansion improve outcomes in obstructive sleep apnea?

Authors:
Zandra Milena Miranda Cuero[1], Elke Van de Casteele[1,2,3], Luc Marks[1], Herman Jr Vercruysse[1,2,3], W. De Vos [1,2,3], N. Nadjmi [1,2,3]
P. Corthouts [2], D. Dielen [2], D. Govaerts [2], J. Jonkergouw [2], L. Renier [2], S. Stevens [2], J. Van de Perre [2], M. Van Genechten [2], G. Van Hemelen [2], F. Vanhove [2], P. Winderickx [2]

[1] Department of Cranio-Maxillofacial Surgery, Antwerp University Hospital, Belgium
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[3] Faculty of Medicine & Health Sciences, University of Antwerp, Belgium

Objectives: Transversal palatal distraction is frequently utilized as an intermediate procedure in the management of obstructive sleep apnea via maxillomandibular advancement. It remains to be clarified whether this initial intervention alone contributes significantly to the treatment of obstructive sleep apnea or if it effectively alleviates patient symptoms at this stage.
Patients and Methods: This retrospective study examined patients diagnosed with obstructive sleep apnea (OSA) who underwent surgically assisted rapid palatal expansion (SARPE) as part of their OSA treatment between 2019 and 2024. Patient data such as age, sex, BMI, skeletal classification and surgical information were recorded. Surgery outcomes were analysed by comparing pre- and post-SARPE data, including polysomnography (PSG) indices such as AHI and OAHI, snoring scores via Visual Analog Scale (VAS), and Epworth Sleepiness Scale (ESS) outcomes. Treatment success was defined as achieving an AHI value of 10 events/hour or at least a 50% reduction in AHI. Pre-post data was statistically tested using paired comparisons. The relationship between changes in OSA data and demographic and surgical information was assessed by linear regression analysis.
Results and discussion: A total of thirty-three patients were included in the study, comprising 25 males (76%) and 8 females (24%), with a mean age of 41.5 ± 8.3 years. Seventy percent of participants exhibited skeletal Class II malocclusion. Baseline polysomnography (PSG) was performed 1.6 ± 2.6 years prior to palatal distraction surgery, and follow-up PSG was conducted after a median period of 6 months (5.3 ± 3.2 months). The Apnea-Hypopnea Index (AHI) demonstrated significant improvement, decreasing from 22.1 ± 16.4 to 14.6 ± 15.2 events per hour ($p < 0.0001$), while the Obstructive Apnea-Hypopnea Index (OAHI) decreased from 21.0 ± 15.8 to 12.7 ± 11.4 events per hour ($p < 0.0005$). Treatment success was achieved in 38% of patients; 9% experienced no change, and 53% remained above the therapeutic threshold. Subjective measures, including snoring Visual Analogue Scale (VAS) and Epworth Sleepiness Scale (ESS), indicated a downward trend, although data were missing for 18 and 19 patients, respectively. Linear regression analysis revealed that individuals with higher baseline AHI, elevated ESS scores, and those who experienced weight loss demonstrated the most pronounced improvements.
Conclusion: Already 38% of patients achieved what we consider treatment success (AHI <10 or ≥50% reduction) following palatal expansion. SARPE was most effective in patients with more severe baseline AHI and in those who lost weight during follow-up, highlighting the importance of patient selection and weight management to optimize outcomes. Future studies should incorporate a larger patient cohort and additional parameters to better predict possible OSA outcomes based on specific patient characteristics.
Keywords: Maxillary Expansion, Obstructive Sleep Apnea, Transpalatal Distraction, Polygraphy, Apnea-Hypopnea Index, Surgical Treatment, CPAP Alternatives, Airway obstruction,

Saturday – 15h40 - 15h50

12.

Transverse Maxillary Distraction in the Management of Obstructive Sleep Apnea: Functional and Aesthetic Outcomes.

Authors:
C. Dauchot, X. Vanden Eynden, C. Gossiaux, M. Lalmand, R. Javadian, D. Dequanter, I. Loeb, E. Boutremans

CHU Saint-Pierre, ULB, Brussels, Belgium

Introduction:
Maxillomandibular advancement (MMA) is one of the most effective surgical options for obstructive sleep apnea (OSA). However, the magnitude of skeletal movements required may compromise facial aesthetics. Transverse maxillary distraction (TPD) offers a complementary approach by enlarging the upper airway transversely and potentially reducing the extent of sagittal advancement.
Objective: To assess the direct impact of TPD on OSA severity and to highlight its role, when combined with MMA, in achieving a balance between functional improvement and facial harmony.
Methods:
A retrospective analysis was performed in patients treated with isolated TPD. Changes in the apnea-hypopnea index (AHI) before and after distraction were evaluated. The implications of combining TPD with MMA in terms of surgical planning and aesthetic outcomes are also discussed. Results: Isolated TPD significantly reduced AHI, confirming its beneficial effect on airway patency. When integrated with MMA, TPD allowed for smaller maxillomandibular advancements while maintaining respiratory efficiency and improving facial aesthetics.
Conclusion:
TPD is an effective therapeutic option for OSA. Alone, it reduces AHI; combined with MMA, it decreases surgical invasiveness and preserves profile harmony without compromising functional results. Keywords: Obstructive sleep apnea – Maxillary transverse distraction – Maxillomandibular advancement – Orthognathic surgery – Facial aesthetics.

Saturday – 17h00 - 17h10

13.

Maxillomandibular advancement surgery may not be suitable for eliminating supine dependent OSA and epiglottic collapse

Authors:
Kastoer, C. [1, 2]; De Latte, I. [2,3]; Coopman, R. [2,4]

1 ENT surgeon, Ghent University Hospital
2 Multidisciplinary Sleep Clinic, Ghent University Hospital
3 Maxillofacial surgeon, General Hospital Sint Lucas Ghent
4 Maxillofacial surgeon, Ghent University Hospital

Keywords: maxillomandibular advancement, epiglottis, drug-induced sleep endoscopy, obstructive sleep apnea, sleep-disordered breathing, personalized medicine, sleep position, supine

Objectives:
Only a few studies have evaluated upper airway collapse patterns using drug-induced sleep endoscopy (DISE) before and after maxillo-mandibular-advancement (MMA). DISE can be a promising tool to identify less suitable candidates for MMA in OSA treatment and aid in a personalized treatment pathway. Previous research indicates that complete circular velar collapse is no contra-indication for MMA. However, the presence of complete anteroposterior epiglottic collapse appears to be associated with a higher risk of MMA treatment failure. The role of sleep position in these patients remains underappreciated. This study prospectively examines treatment failure and sleep position as assessed by polysomnography (PSG) and DISE.

Material and Methods:
Sixteen OSA patients underwent MMA. Patients characteristics were: age 52 [46-56] years, BMI 25.2 [23.8-26.7] kg/m2; baseline anea/hypopnea-index (AHI) 29.4 [19.6-66.0]/h; expressed as median [quartile 1 - quartile 3]. Postoperative PSG and DISE were performed. Upper airway collapse patterns during DISE were scored in a standardized manner by a single experienced ENT surgeon. Baseline and postoperative AHI were compared using a Wilcoxon signed-rank test.

Results:
During DISE in the supine position, 10 patients (62,5%) demonstrated primary epiglottic collapse preoperatively; of these, 8 (80%) showed residual collapse postoperatively. All 5 patients with **complete** anteroposterior epiglottic collapse preoperatively retained this collapse pattern. MMA surgery was successful in 15 patients, reducing the median AHI by 75% (p=0.0001) from 29.5 [23.1 -62.6] to 7.6 [5.4 – 13.4]. One patient (baseline AHI 16.0/h) experienced MMA treatment failure, with AHI 34.2/h 6 months postoperatively. Despite apparent worsening, PSG and DISE confirmed OSA and snoring occurred exclusively in the supine position (supine-dependent OSA).

Conclusion:
MMA may be insufficient for treating supine-dependent OSA and epiglottic collapse. Personalized medicine and careful patient selection is critical. Greater attention to sleep position during PSG and positional maneuvers during DISE (mouth closure, supine vs. non-supine) is warranted. Larger prospective studies are needed to further establish the predictive value of DISE for MMA outcomes.

Presentation focus:
The presentation will highlight the clinical significance of complete anteroposterior epiglottis collapse with illustrative cases, and discuss potential adjunctive treatment strategies in such patients.

Saturday – 17h10 - 17h20

14.

Can DISE VOTE Classification Predict MAD Treatment Outcomes in OSA?

Authors:
L. Fontaine, M. Peters, F. Shall, C. Politis, M. Strauss, L. Evrard, R. Glineur.

Functional Unit for Sleep Disorders and Department of Stomatology, Erasme Hospital, Brussels, Belgium.

Abstract:
This retrospective study, conducted within the Functional Unit for Sleep Disorders and the Department of Stomatology at Erasme Hospital, explores whether the VOTE classification obtained during drug-induced sleep endoscopy (DISE) can predict the response to mandibular advancement device (MAD) therapy in patients with obstructive sleep apnea (OSA). Patients recruited from 2017 to early 2025 underwent comprehensive sleep assessment including diagnostic and follow-up polysomnography, ENT evaluation, DISE scoring, and personalized MAD treatment. The study aims to determine whether DISE-derived VOTE scores can guide patient selection and optimize therapeutic outcomes, potentially reducing ineffective treatments and improving individualized care strategies.

Saturday – 17h20 - 17h30

15.

Validation of IPS Case Designer® for 3D CBCT-based Upper Airway Analysis in Patients with Obstructive Sleep Apnea

Authors:
Grymonprez, E.[1]; Leyman B.[1]; Diez-Fraile, A.[1,2]; Abeloos, J.[3]; De Backer, T.[1,3,4]; De Ceulaer, J.[1,3,4]; De Clercq, C.[3]; De Ketelaere, F.[5]; Desmedt, M.[1,4]; Lamoral, P.[1,3,4]; Nagy, K.[1,6]; Supply, K.[5]; Spaas, C.[1,4]; Swennen, G.[1]; Veys, B.[1,3,5]; Neyt, N.[1,4].

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***Keywords*:** obstructive sleep apnea; CBCT; IPS Case Designer®; airway validation; orthognathic surgery.

***Objectives*:** Obstructive sleep apnea (OSA) is a prevalent disorder caused by recurrent collapse of the upper airway during sleep. Maxillomandibular advancement (MMA) surgery enlarges the pharyngeal airway, leading to significant improvement in symptoms and polysomnographic outcomes in most patients. Quantification of airway volume and minimum cross-sectional area (MCA) is essential for evaluating surgical effects. IPS Case Designer® (IPSCD) has been recently validated in healthy participants, but its performance in OSA patients remains unknown. This study investigates the reproducibility and agreement of IPSCD for upper airway analysis in this setting.

***Material and Methods*:** This retrospective monocenter study reuses pre- and postoperative CBCT scans of adult OSA patients (n=10) treated with MMA at AZ Sint-Jan (Bruges) by a single surgeon (NN). These scans were previously analyzed with Maxilim software in an earlier study. DICOM data are reoriented to the Frankfort horizontal plane, and airway segmentation is performed with IPSCD. Total pharyngeal volume, subregional (naso-, oro-, hypopharynx) volumes, and MCAs are obtained. Intra-observer reliability will be assessed with intraclass correlation coefficients. Agreement with those earlier measurements will be examined using Bland-Altman analysis and concordance correlation coefficients.

Results: Analysis is ongoing. Outcomes will include reliability indices, agreement metrics, and consistency checks between subregions and total volumes.

Conclusion: This study represents a further step in our group's ongoing work on three-dimensional airway assessment. Establishing reproducible measurements with IPSCD in OSA patients consolidates a methodological framework for future clinical and research projects.

Saturday – 17h30 - 17h40

16.

Analysis of Airway Maintenance After Maxillomandibular Advancement in Skeletal Class II Malformations Using an AI-Based 3D Autosegmentation Tool: One-Year Results in 40 Patients.

Authors:
D'Hondt Marvin[1], Denoiseux Benjamin[1], Ureel Matthias[1], De Kock Lisa[1], Coopman Renaat[1]

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Abstract:
Background: Mandibular advancement is primarily performed to correct skeletal Class II skeletal malformations, with the additional effect of enlarging the posterior upper airway. Outside of the obstructive sleep apnea population, long-term stability of these airway changes has not been fully characterized. Artificial intelligence (AI)-based tools provides a new and efficient method for airway assessment.

Methods: 24 patients with skeletal Class II malocclusion underwent mandibular advancement . CT scans were acquired preoperatively and 6 to 12 months postoperatively. Posterior upper airway volume and mandibular advancement were measured with validated AI-based tools (Medannot® and 3DMedX®) and a comparative statistical analysis was performed.

Results: A significant posterior upper airway volume augmentation was achieved in all patients with a mean augmentation of 25% (+4 763.97 mm, $P < 0.001$) for a mean advancement of the mandible of 6.27 mm (SD 2.27). There was only a weak positive correlation between advancement extent and posterior airway volume augmentation (r 0.225). AI-driven auto-segmentation and AI-driven mandibular advancement calculation made the analysis time considerably shorter with an average of 8.5 minutes per patient.

Conclusion: The posterior upper airway is significantly augmented by mandibular advancement alone 6 months to 1 year after surgery. The extent of the volume gain does not solely depend on the achieved advancement and other factors such as muscle and fat distribution should be taken into account. Airway changes should thus be taken into account in orthognathic planning but cannot be predicted on bony movements alone. AI-driven auto-segmentation and mandibular advancement calculation considerably speeds up the process in a reliable and efficient way for longitudinal airway evaluation and clinical applications. In the future, it may help better predict upper airway volume changes in orthognathic patients.

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