

Hotel Diamante, Alessandria  
Sabato 5 maggio, 2018.



Azienda Ospedaliera Nazionale  
SS. Antonio e Biagio e Cesare Arrigo  
Alessandria



## ONJ UPDATE 2018

**OSTEONECROSI DELLE OSSA MASCELLARI (ONJ)  
DA BIFOSFONATI E ALTRI FARMACI:**

*PREVENZIONE, DIAGNOSI, FARMACOVIGILANZA, TRATTAMENTO*

**New technologies help the functional reconstruction in advanced-stage mandibular medication-related osteonecrosis of the jaw (MRONJ)**

**Alberto Bedogni, M.D. FEBOMS**



# Declaration: No potential Conflicts of Interest

Faculty: **Alberto Bedogni, MD, FEBOMS**

- *Director, Regional Center for Prevention, Diagnosis and Treatment of Medication and Radiation-related Bone Diseases of the Head and Neck (DGR 2707, 12/2014) Hospital Trust of Padua, Italy*
- *Assistant professor, Unit of Maxillofacial Surgery, Department of Neuroscience-DNS, University of Padua*
- *Board member of the Expert Panel Recommendations of the Italian Societies for Maxillofacial Surgery (SICMF) and Oral Medicine and Pathology (SIPMO) on MRONJ*

**Relationships with commercial interests:**

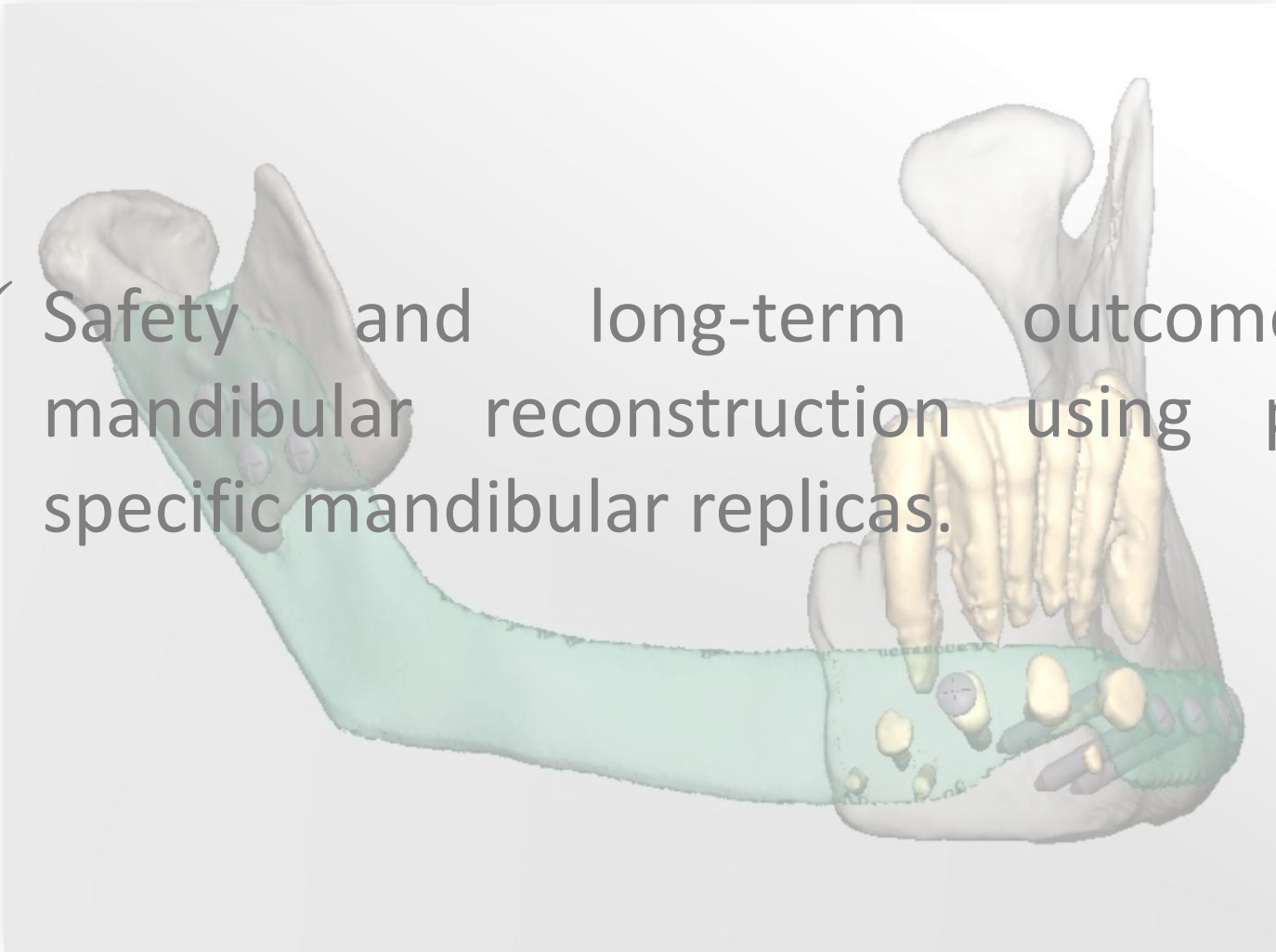
– Sintac s.r.l. Research Grant , June 2017.

**“In vitro” planning and manufacturing of biocompatible customised mandibular bone substitutes using CAD-CAM technology**

## Aim of the study

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- ✓ Safety and long-term outcomes of mandibular reconstruction using patient-specific mandibular replicas.



# Material & Methods

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## Study design:

- Retrospective cohort study

## Setting:

- Unit of Maxillofacial Surgery of Padua

## Study period

- March 2012- February 2018

## Eligibility criteria:

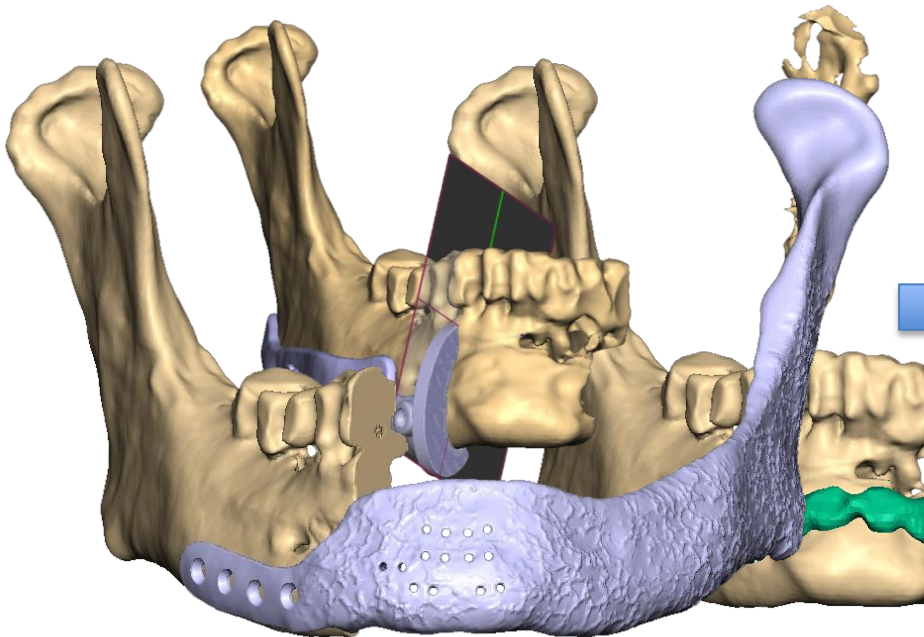
- MRONJ patients who underwent segmental resection of the mandible and simultaneous reconstruction patient-specific mandibular replicas.



# Material & Methods

## Basic technology

- **CAD/CAM** (Computer Aided Design/Manufacture) (Implant software (Planning of resection, cutting guides and milling of the healthy side and design of the customized prosthesis))



# Material & Methods

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## Surgery:

### 2- Craniotomy with Cerebral tissue resection





# Results

## ✓ Patient's features:

- **10 consecutive MRONJ patients** (male=4, female=6) out of 20 eligible
- Mean age 69 years (59-78 years)
- **Breast cancer** was the most common diagnosis (5 cases), followed by MM (3 cases).
- **Zoledronate** was the most common antiresorptive
- **five patients had previous surgery**
- **Stage 3** was the most common (7 cases), followed by **stage 2b**.
- **All patients were ASA 3.**



## 1. Safety:

- Mean Duration of surgery 270 min (range 141-375)
- Mean hospital stay 12 days (4 -44 days)
- *Oral feeding*: 1.4 days (range 1-3)
- Temporary Tracheostomy (1 pt.)
- **Perioperative Complications:**
  - One patient died 4 days postop (ARDS)
  - Severe facial swelling (1 case)
  - Postop dehiscence (2 cases)
  - **Extrusion (2 cases)**

## 2. Long-term

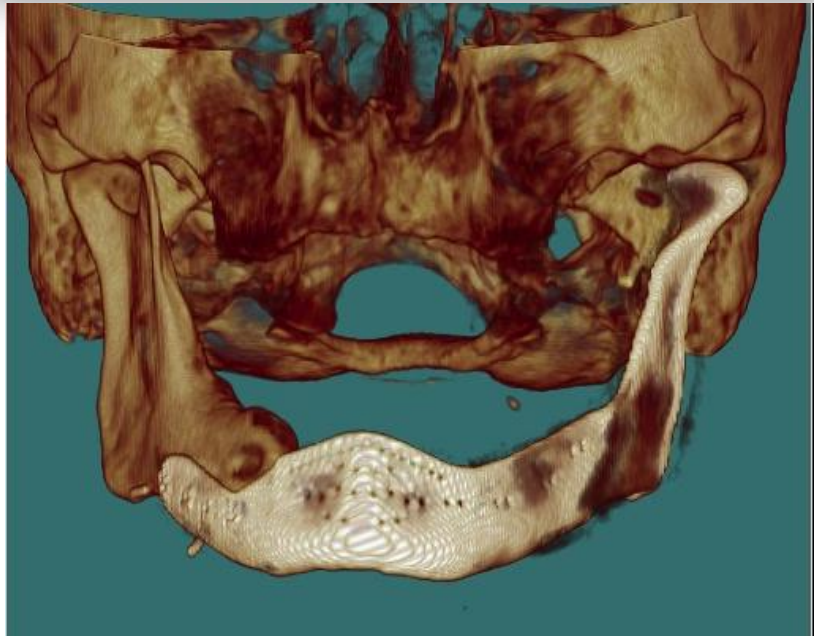
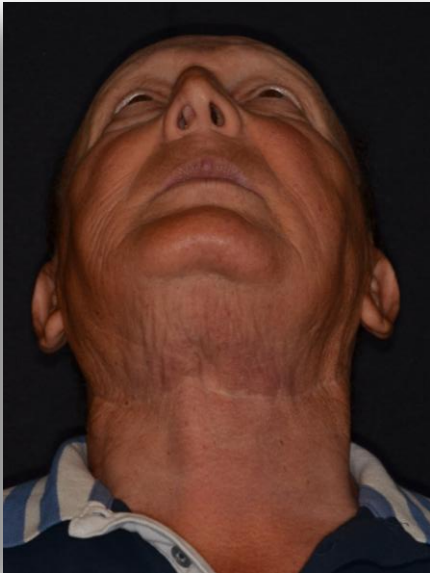
- *Mean follow-up: 26months (range 3-50)*
- *Stable occlusion*
- *Stability of the implant over time:*
  - No dislocation/fracture
  - *Extrusion (1 case) 26months later*



- ✓ 67 y-o male, metastatic prostate cancer (monthly Zoledronate 12 courses) MRONJ mandible (stage 3 SICMF-SIPMO)

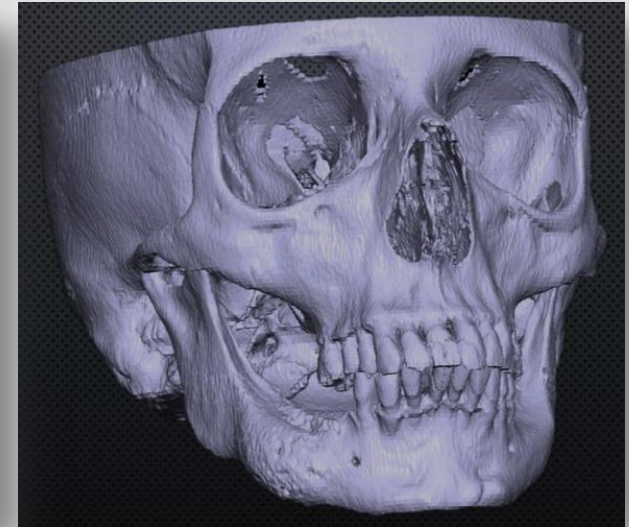
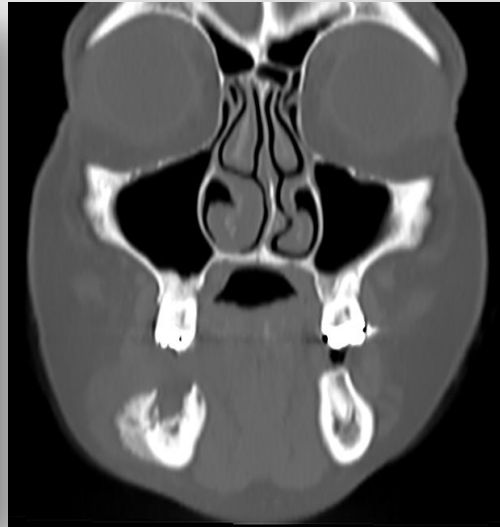
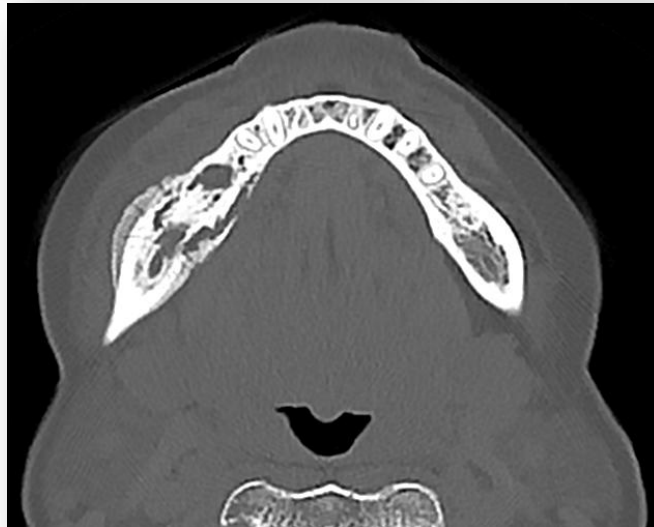


# 4-Y FOLLOW-UP

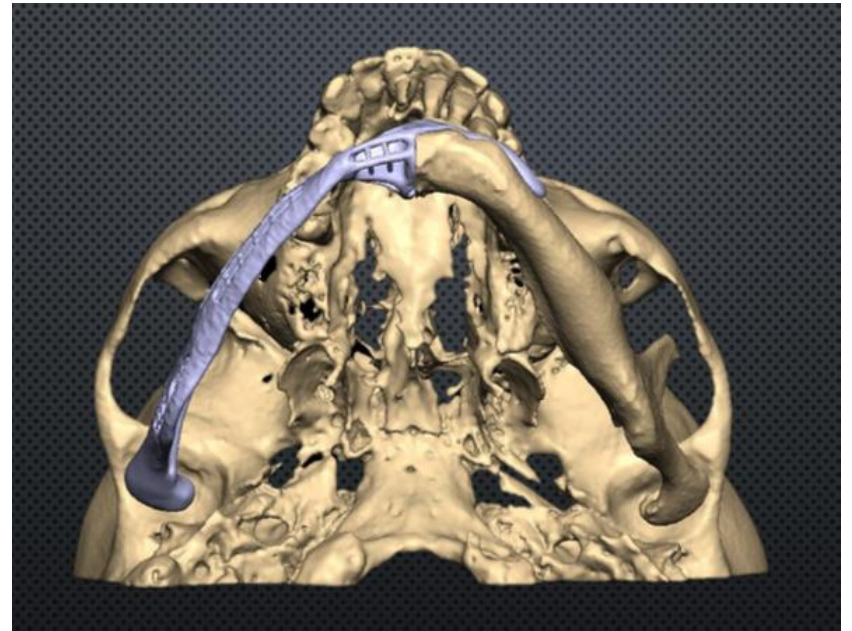




✓ 59 Y-O, breast cancer, trigger: periodontal infection, MRONJ mandible (stage 2b SICMF-SIPMO)



## ✓ Computer-assisted reconstructive surgery





# 1-Y FOLLOW-UP



# Discussion

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*“Functional and anatomic surgery rather than resective”*

- Adequate lower lip support
- Facial Symmetry maintained
- Immediate recover of TMJ function
- Tracheostomy tube unnecessary
- **Anticipated oral feeding resumption**

*Stable coverage (inner/outer) essential*

Bedogni A, Bettini G, Ferronato G, Fusetti S, Saia G. Replacement of fractured reconstruction plate with customised mandible implant: a novel technique. **Laryngoscope** 2014, 124(2): 401-4. doi: 10.1002/lary.24230. ISSN: 0023852X



# Conclusion

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## Pro's:

- Reduced surgical time
- *Immediate restoration of oral functions*
- *Reasonable aesthetic result in one go*
- *Well-tolerated surgery*

## Con's:

- Dental rehabilitation not feasible

## To be done:

- Improve perimplant surfaces with promotion of human cell adhesion
- Bacteriostatic effect of the construct
- Biomechanics in the long-term
- Dental rehabilitation



# Acknowledgements

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*Dr Giorgia Saia, MD<sup>1,2</sup>*

*Dr Giordana Bettini, MD<sup>1,2</sup>*

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- **54 y-o female**
- **Disease: breast cancer with bone metastases to hip and spine (Jan 2009)**
- **Chemo: daily exemestane**
- **Antiresorptives: i.v. (4mg/28d) zoledronate (Jan 2009- Jan 2011)**
- **Comorbidities: multiple SREs spine**

**MRONJ diagnosis: February 2011 (47 years old)**

Periodontal infection, spontaneous tooth loss (right maxilla), with abscess formation and cutaneous drainage to the left cheek; progressive multiple sites of bone exposure and painless suppuration

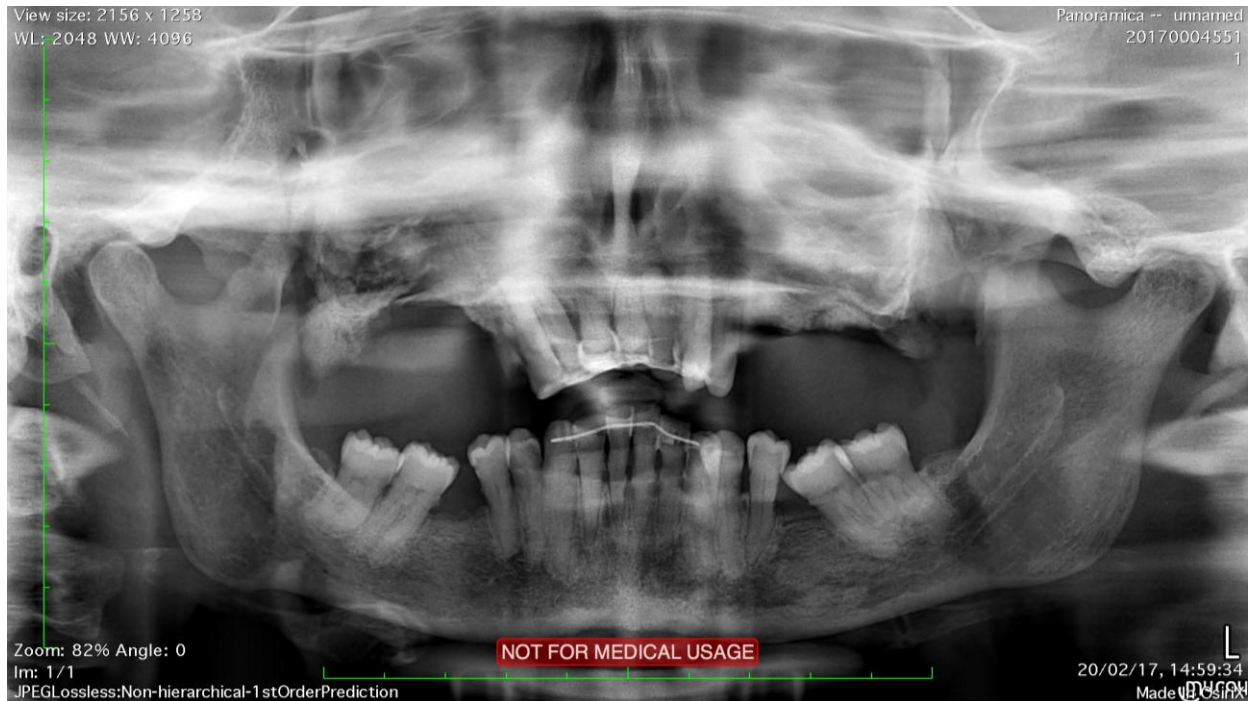
### **Medical treatment:**

- withdrawal of zoledronate
- monthly oral penicillin/metronidazole
- daily clorexidine mouth rinses

**7 yrs.**



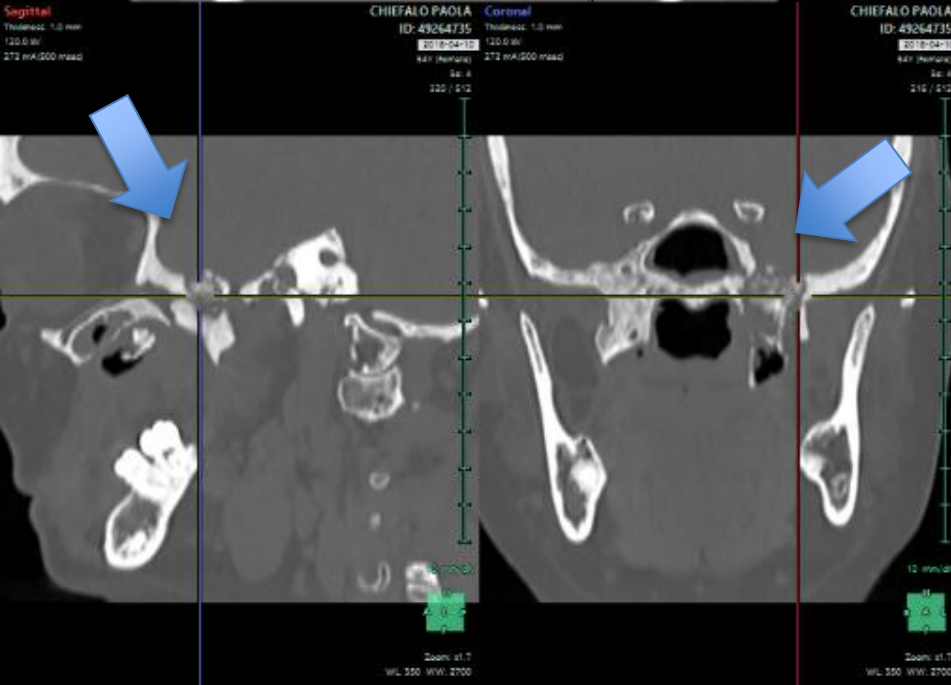
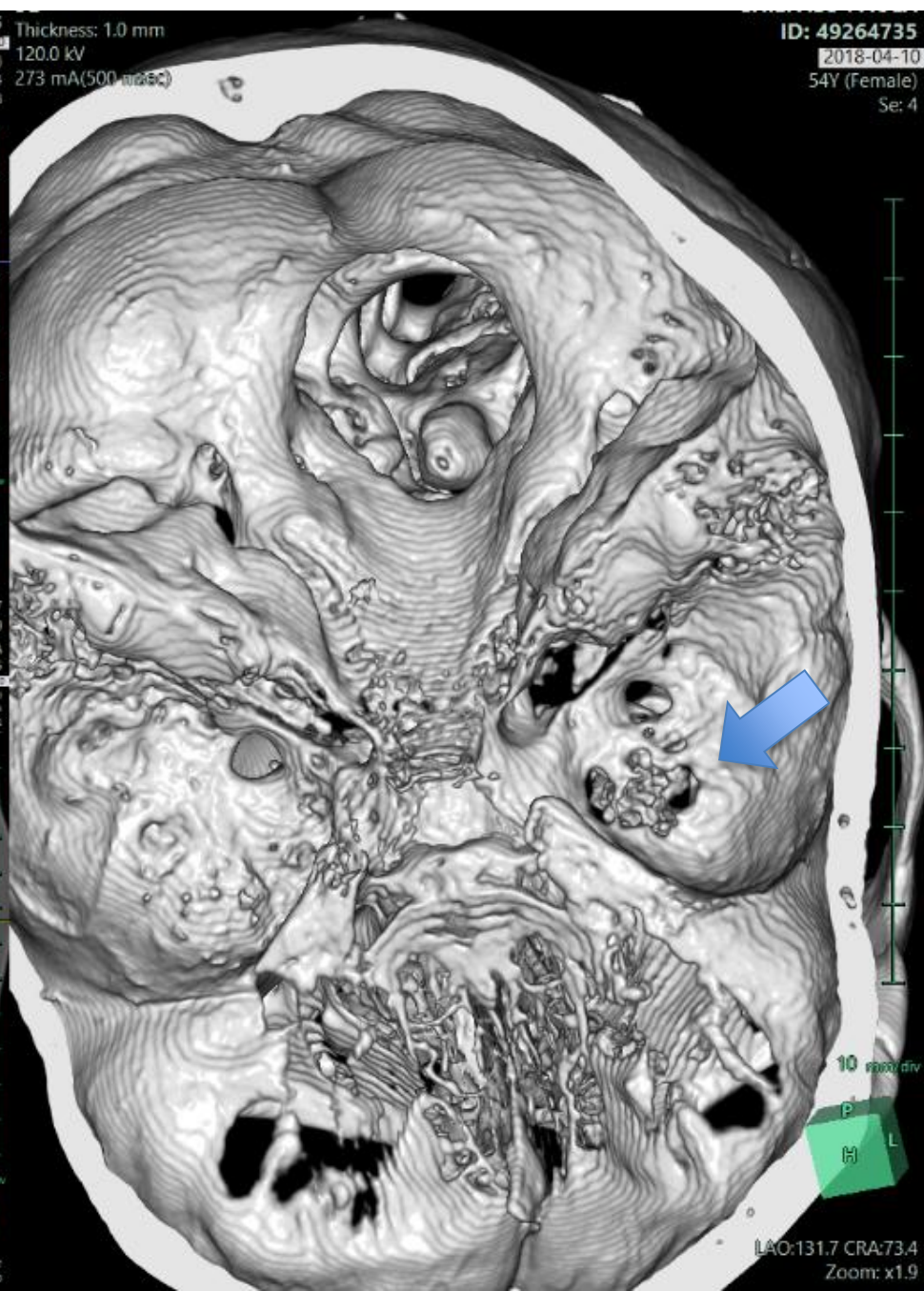
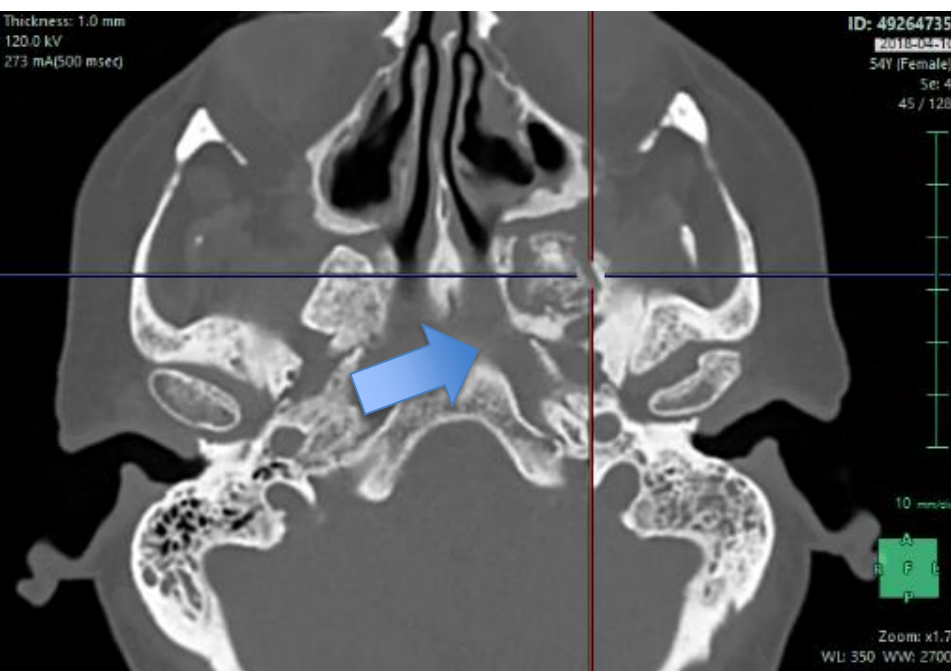
March 2018





# Osteonecrosis of the middle cranial fossa

April 2018



Prejudice is a great time-saver. You can form opinions without having to get the facts. Prejudice not being founded on reason cannot be removed by argument.

Samuel Johnson