KPPIKG 2016
The 17th Scientific Meeting and Refresher Course in Dentistry
Faculty of Dentistry Universitas Indonesia

2016 Faculty of Dentistry Universitas Indonesia
Jakarta, Indonesia

Editor : Dr. Yuniardini S. Wimardhani, drg, MSc.Dent
Nadhia Anindhita Harsas, drg, SpPerio
Andini Tri Wijayati,drg
KPIIKG 2016
The 17th Scientific Meeting
and Refresher Course in Dentistry

Content
Welcome Note From the Chairperson of KPIIKG 2016 ................................................................. iii
Note from the Editors ....................................................................................................................... IV

SECTION ONE: ORIGINAL ARTICLE
1. PREVENTIVE AND SELF CARE TRAINING IN PREGNANT WOMEN TO IMPROVES KNOWLEDGE, ATTITUDE, AND PRACTICE
Anne Agustina Suwargiani, Netty Suryanti, Asty Samiaty Setiawan ........................................... 1

2. THE EFFECT OF STRAWBERRY ON COLOR CHANGING OF TOOTH WITH EXTRINSIC STAIN
Ita Astit Karmawati, Ita Yulita, Rahaju Budiarti .......................................................................... 9

3. COLOR CHANGES OF MICROHYBRID RESIN COMPOSITE AFTER BLEACHED WITH HYDROGEN PEROXIDE
Astrid Yudhid, Kholidina Imanda Harahap, Sefty Aryani Harahap .................................................. 15

4. SURFACE HARDNESS OF HIGH COPPER DENTAL AMALGAM AFTER IMMERSED IN FERMENTED MILK
Kholidina. Harahap, Rusfian, Aflah Triana ................................................................................... 19

5. ANTIDACTERIAL EFFECT OF RADISH TUBERS (Raphanus sativus L.) ON F. nucleatum AND P. gingivalis AS AN ALTERNATIVE MATERIAL FOR ROOT CANAL MEDICAMENT (in-vitro study)
Cut Nurliza, Trimumi Abidin ....................................................................................................... 23

6. POOR ORAL HEALTH IS RELATED TO CARDIOVASCULAR DISEASES
Bramma Kiswanjaya, Trelia Boel, Menik Priminiarti, Hanna.B. Iskandar ......................................... 29

7. INCIDENCE OF PARESTHESIA FOLLOWING THIRD MOLAR MANDIDULAR SURGERY IN RSGMP FKGUI ON PERIOD JUNE-AUGUST 2015
Egy P Lenggogeni, Vera Julia, Rachmitha Anne ............................................................................ 33

8. CLINICAL EVALUATION OF 20 AMELOBLASTOMA PATIENTS POST PARTIAL MANDIDULAR RESECTION WITH RECONSTRUCTION PLATE (Research Paper)
Santi Anggraini, Corputty Johan EM, Lilies D. Sulistyani ............................................................... 39

9. RELATIONSHIP BETWEEN ANGLE’S CLASSIFICATION OF MALOCCLUSION AND FACIAL PROFILES PATTERN
Rudi S Darwis, Hillida Herawati, Rina Putt; Noer Fadilah, Cindy Anggadini .............................. 47

10. SALIVARY PH AND BACTERIAL COUNT ASSESMENT IN CHILDREN WITH HIGH CARIES RISK
Riana Wardani, Cucu Zubaedah, Asty Samiati ................................................................................ 51

11. EFFECT OF POSITIVE IMAGES "VISIT TO THE DENTIST' TOWARDS ANXIETY (STUDY OF SALIVARY ALPHA AMYLASE)
Adina Novia, Margaretha Suharsini, Mochamad Fahlevi Rizal ................................................................. 55

12. EFFECTIVENESS OF LIME (CITRUS AUNRANTIFOUA) EXTRACT IN INHIBITING DENTAL PLAQUE FORMATION FOR EARLY CHILDHOOD CARIES"
Fajriani, Resky Mustafa .................................................................................................................. 59

13. RELATIONSHIP BETWEEN EATING FREQUENCY AND EARLY CHILDHOOD CARIES (ECC) OCCURANCE IN ENDEMIC AREA OF MALNUTRITION STATUS
Pindobilowo, Febriana Setiawati, Riska Rina Darwita ....................................................................... 63

14. RADIOGRAPHIC POSITION OF MENTAL FORAMEN IN BATAKAND MINANGKABAU STUDENTS IN FK UNSRI
Putri Elyar Lestari, Shanty Chairani, Erwan Naufal ........................................................................ 67
### SECTION TWO: CASE REPORT

1. **DELAYED TOOTH REPLANTATION AFTER TRAUMATIC AVULSION: A CASE REPORT**
   - Emmanuel G. Untoro, Bambang Nursasongko
   - Pages: 71

2. **ENDODONTIC TREATMENT ON MAXILLARY THIRD MOLAR WITH LIMITED MOUTH OPENING**
   - Ridzki Ridhalaksani, Kamizar
   - Pages: 77

3. **REMOVAL OF METAL POST USING ULTRASONIC DEVICE IN NON-SURGICAL RETREATMENT PROCEDURE: A CASE REPORT**
   - Dian S. Nasution, Anggraini Margono
   - Pages: 81

4. **ROOT CANAL TREATMENT OF NON VITAL TOOTH WITH DISCOLORATION AND DIASTEMA USING INDIRECT COMPOSITE VENEER**
   - Syahdini Meriana, Tien Suwartini, Aryadi Subrata
   - Pages: 87

5. **INDIRECT COMPOSITE RESIN RESTORATION IN ENDODONTICALLY TREATED POSTERIOR TEETH**
   - Melaniwati, Juanita A Gunawan, Ade Priyanti
   - Pages: 91

6. **ENDODONTIC TREATMENT FOR ANOMALIES TEETH**
   - Nevi Yanti, Fitri Yunita, Trimunia Abidin
   - Pages: 95

7. **RECURRENT INTRAORAL HERPES: THERAPEUTIC CHALLENGE IN DIFFERENT IMMUNE STATUS PATIENTS (Report of Two Cases)**
   - Ahmad Ronal, Harum Sasanti
   - Pages: 103

8. **THE COMPLEXITY IN TREATING NECROTIZING ULCERATIVE ORAL LESIONS IN PEDIATRIC PATIENT WITH ACUTE LEUKEMIA**
   - Ambar Kusuma Astuti, Harum Sasanti Yudhoyono
   - Pages: 109

9. **PREDISPOSING FACTORS OF RECALCITRANT ORAL LICHEN PLANUS EROSION TYPE (A CASE REPORT)**
   - Fitriany Darwis, Afi Savitri Sarsito
   - Pages: 117

10. **NOMA-LIKE ORAL LESIONS INDUCED BY POLICRESULEN IN A PATIENT WITH MYELOFIBROSIS**
    - Widya Apsari, Harum Sasanti
    - Pages: 121

11. **DENTIST’S ROLE IN IMPROVING ORAL FUNCTION OF PATIENT WITH ACUTE MYELOID LEUKEMIA**
    - Dwi Ariani, Siti A. Pradono
    - Pages: 125

12. **ORAL CANDIDIASIS IN HIV+ PATIENT: CHALLENGE IN TEAMWORK MANAGEMENT**
    - Anzany Tania Dwi Putri, Felicia Paramita
    - Pages: 129

13. **MALPOSITION OF TEETH PREDISPOSED RECURRENT APHTHOUS STOMATITIS: NEED TO BE OBSERVED**
    - Helena Meyyulinair, Siti Aliyah Pradono
    - Pages: 135

14. **COMBINATION OF ARCH BAR A D QUICK FIX AS MAXILLOMANDIBULAR FIXATION IN THE ANGLE AND SYMPHYSIS FRACTURE OF MANDIBLE (CASE REPORT)**
    - Siska Sutedja, Evy Eida Vitria
    - Pages: 139

15. **ADENOMATOID ODONTOGENIC TUMOR OF THE MANDIBLE MIMICKING DENTIGEROUS CYST: A CASE REPORT**
    - Fiona Verisqa, Dwi Ariawan
    - Pages: 143

16. **MANAGEMENT OF SCHWANNOMA OF THE TONGUE (CASE REPORT)**
    - Bambang T. Susilo, Vera Julia
    - Pages: 147

17. **MANAGEMENT OF LOWER LIP MUCOCELES REMOVAL BY CARBON DIOXIDE (CO2) LASER: CASE REPORT**
    - Fredy Budhi Dharmawan, Rachmitha Anne
    - Pages: 149

18. **SURGICAL MANAGEMENT OF MANDIBULAR ADENOMATOID ODONTOGENIC TUMOR: REPORT OF A RARE CASE**
    - Yus A. Putra Wibawa, Lilies Dwi Sulistyani
    - Pages: 153
<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.</td>
<td>LIFE THREATENING ODONTOGENIC INFECTION</td>
<td>Hardi S Riyadi, Rachmita Anne</td>
<td>159</td>
</tr>
<tr>
<td>20.</td>
<td>INFECTION ON LARGE ERUPTED COMPLEX ODONTOMA OF MANDIBLE: A RARE CASE</td>
<td>Yayyan Amman, Vera Julia</td>
<td>165</td>
</tr>
<tr>
<td>21.</td>
<td>MANAGEMENT OF RADICULAR CYST IN THE MAXILLA WITH SURGICAL ENucleATION: A CASE REPORT</td>
<td>M Ramaditto R, Vera Julia, Benny S Latief</td>
<td>169</td>
</tr>
<tr>
<td>22.</td>
<td>SURGICAL EXPOSURE OF IMPACTED MAXILLARY CENTRAL INCISOR WITH INVERTED POSITION IN PRE-ORTHODONTIC TREATMENT: A CASE REPORT</td>
<td>R. Hari Triwijaya, Lilies Dwi Sulistyani</td>
<td>173</td>
</tr>
<tr>
<td>23.</td>
<td>MARSUPIALIZATION IN PEDIATRIC RANULA</td>
<td>I1ham Ramadhan, Lilies D. Sulistyani</td>
<td>177</td>
</tr>
<tr>
<td>24.</td>
<td>SURGICAL MANAGEMENT OF AN IMPACTED MANDIBULAR THIRD MOLAR WITH OROCUTANEOUS FISTULA: CASE REPORT</td>
<td>Riadin J. Patomo, Retnowati, Corputty Johan</td>
<td>183</td>
</tr>
<tr>
<td>25.</td>
<td>MODIFIED SURGICAL TREATMENT OF HIGH BUCCAL FRENUM ATTACHMENT TO IMPROVE PROSTHETIC STABILITY: A CASE REPORT</td>
<td>Yona One Sidarta, Fredy Mardiyantoro</td>
<td>187</td>
</tr>
<tr>
<td>26.</td>
<td>THE PRINCIPLES OF SELECTING BIOPSY TECHNIQUE ON ORAL SOFT TISSUE PATHOLOGY</td>
<td>Mohammad Farid Ratman, Rachmitha Anne</td>
<td>191</td>
</tr>
<tr>
<td>27.</td>
<td>MANAGEMENT OF DENTOALVEOLAR TRAUMA WITH EYELET WIRE SPLINT IN 7 YEARS OLD PATIENT: CASE REPORT</td>
<td>Tri H.W. Prasetyo, Dwi Ariawan</td>
<td>195</td>
</tr>
<tr>
<td>28.</td>
<td>SURGICAL MANAGEMENT OF SUBMANDIBULAR GLAND SIALOLITHIASIS: A CASE REPORT</td>
<td>Yohan E. Marpaung Benny S. Latief, Dwi Ariawan</td>
<td>199</td>
</tr>
<tr>
<td>29.</td>
<td>DELAYED BLEEDING 30 DAYS AFTER REMOVAL OF IMPACTED MANDIBULAR THIRD MOLAR</td>
<td>Nakul Uppal</td>
<td>203</td>
</tr>
<tr>
<td>30.</td>
<td>REMOVAL OF IMPACTED THIRD MOLAR IN MAXILLARY SINUS ASSISTED BY ENOSCOPY (A CASE REPORT)</td>
<td>Oditya Hamzah, Nur Aini, Lilies D. Sulistyani, M. Syafrudin Hak</td>
<td>205</td>
</tr>
<tr>
<td>31.</td>
<td>CASE REPORT: MAXILLARY &amp; MANDIBULAR ORIF IN PATIENT WITH FRONTAL, INFRAORBITAL, MAXILLA AND MANDIBLE FRACTURES</td>
<td>M. Zain Angriadi, Pradono</td>
<td>209</td>
</tr>
<tr>
<td>32.</td>
<td>THREE-DIMENSIONAL MODEL UTILIZATION FOR RECONSTRUCTION IN ORAL AND MAXILLOFACIAL SURGERY: A CASE REPORT</td>
<td>Ista Damayanti, Vera Julia, Benny S. Latief, Dwi Ariawan</td>
<td>213</td>
</tr>
<tr>
<td>33.</td>
<td>FOLLICULAR AMELOBLASTOMA: A CASE REPORT</td>
<td>Ira Suciati, Dwi Ariawan</td>
<td>217</td>
</tr>
<tr>
<td>34.</td>
<td>MORTAL PULPOTOMY TREATMENT TO MAINTAIN DENTAL ARCH SPACE ON 8 YEARS OLD PATIENT</td>
<td>Retno Oktasari, Sarworini B. Budiardjo</td>
<td>221</td>
</tr>
<tr>
<td>35.</td>
<td>DE TAL Treatment FOR CEREBRAL PALSY'S PATIE T AGE II YEARS OLD</td>
<td>Berthauli Ester Nurnaida Sirait, Margaretha Suharsini</td>
<td>225</td>
</tr>
<tr>
<td>36.</td>
<td>MODIFIED OPEN COILED SPACE REGAINER FOR MESIAL DRIFTING OF TOOTH 36 IN A 7 YEARS OLD BOY (CASE REPORT)</td>
<td>Wahyu Rahdelita, Margaretha Suharsini</td>
<td>229</td>
</tr>
<tr>
<td>37.</td>
<td>IDENTIFYING CLINICAL DIAGNOSIS OF AGGRESSIVE PERIODONTITIS CASES</td>
<td>Benso Suljiaya, Sri Lelyati Masulili, Robert Lessang, Siti Wuryan Prayitno, Agustine Irene Sukardi</td>
<td>235</td>
</tr>
<tr>
<td>38.</td>
<td>MANAGEMENT OF PERIODONTAL TISSUE DEFECT WITH REGENERATIVE THERAPY</td>
<td>Billy Martin, Yulianti Kemal, Felix Hartono</td>
<td>239</td>
</tr>
</tbody>
</table>
### SECTION THREE: LITERATURE REVIEW

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MEDICAL RECORD AS EVIDENCE AND LEGAL DEFENSE FOR DENTIST</td>
<td>Tjen Dravinne Winata, Irin Kirana</td>
<td>247</td>
</tr>
<tr>
<td>2. HOSPITALITY IN DENTAL CLINIC</td>
<td>Sri Rahayu, Wahyu Sulistiaidi</td>
<td>251</td>
</tr>
<tr>
<td>3. MECHANISM OF MANY NATURAL MATERIALS AS MATERIAL OF EXTRACORONAL</td>
<td>Meitsalisa S. Mardina, Meiny F. Amin</td>
<td>255</td>
</tr>
<tr>
<td>WHITENING: A BRIEF REVIEW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. PROPER TIMING FOR DENTAL IMPLANT PLACEMENT: WHEN TO RUSH IT AND</td>
<td>Ferdinand Dino</td>
<td>259</td>
</tr>
<tr>
<td>WHEN TO TAKE IT SLOW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. TISSUE GRAFT FOR GINGIVAL REVERSION AND FURCATION INVOLVEMENT</td>
<td>Hendri Poemomo</td>
<td>263</td>
</tr>
<tr>
<td>6. CORTICOTOMY FOR ACCELERATING ORTHODONTIC TOOTH MOVEMENT</td>
<td>Angelique Julikadewi</td>
<td>269</td>
</tr>
<tr>
<td>7. PROPER AND IUDICIOUS USE OF ANTIBIOTICS IN PEDIATRIC DENTAL PATIENT</td>
<td>Sri Ratna Laksmiastuti</td>
<td>275</td>
</tr>
<tr>
<td>8. TRANSMISSION OF STREPTOCOCCUS MUTANS AND DENTAL CARIES RISK IN</td>
<td>Udijanto Tedjosasongko</td>
<td>281</td>
</tr>
<tr>
<td>CHILDREN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. HYALURONIC ACID AS A PREVENTIVE ANTIBACTERIAL AGENT AGAINST DENTAL</td>
<td>Adita Gayatri, Margaretha Suharsini</td>
<td>287</td>
</tr>
<tr>
<td>BLACK STAIN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. ADENOID HYPERTROPHY AND PALATINE DIMENSIONAL CHANGES IN CHILDREN</td>
<td>Astrit Kusurnaningrum, Sarworini B. Budiardjo</td>
<td>291</td>
</tr>
<tr>
<td>WITH MOUTH BREATHING HABIT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. HEAD POSTURE AND FACIAL PROFILE OF CHILDREN WITH ADENOID</td>
<td>Joshua Calvin, Sarworini B. Budiardjo</td>
<td>297</td>
</tr>
<tr>
<td>HYPERTROPHY-ASSOCIATED MOUTH BREATHING HABIT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. ORAL HEALTH STATUS OF PATIENTS WITH LEUKEMIA</td>
<td>Aliyah, Heriandi Sutadi</td>
<td>303</td>
</tr>
<tr>
<td>13. TOOTH ERUPTION IN CHILDREN WITH DIABETES MELLITUS</td>
<td>Danar Pradipta Rani, Margaretha Suharsini</td>
<td>309</td>
</tr>
<tr>
<td>14. HUMAN Vm. USES ACCELERATE THE PERIODONTAL DISEASE</td>
<td>Dewi N. Mustaqimah, Devie Falinda</td>
<td>315</td>
</tr>
<tr>
<td>15. A SYSTEMATIC REVIEW OF PERIODONTAL DISEASE AND CARDIOVASCULAR</td>
<td>Sandra Olivia Kuswandani, Yuniarti Soeroso, Sri Lelyati Masulilli</td>
<td>319</td>
</tr>
<tr>
<td>DISEASE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. PREVALENCE AND RISK FACTORS OF DENTAL EROSION: ASYSTEMATIC REVIEW</td>
<td>Annisa Septal ita, Diah A. Maharani, Annasatri Bahar</td>
<td>325</td>
</tr>
<tr>
<td>17. EFFECTIVENESS OF SILVER DIAMINE FLUORIDE IN DIFFERENT CONCENTRATIONS TO ARREST DENTAL CARIES - A LITERATURE REVIEW</td>
<td>Rani Anggraini, Risma R. Darwita, Melissa Adiatman</td>
<td>333</td>
</tr>
<tr>
<td>18. MASTICATORY REHABILITATION AS A THERAPY FOR COGNITIVE IMPAIRMENT</td>
<td>Kartika Indah Sari</td>
<td>339</td>
</tr>
<tr>
<td>19. ORAL APPLIANCE THERAPY FOR TREATMENT OF SLEEP BRUXISM</td>
<td>Ade Amahorseya</td>
<td>343</td>
</tr>
</tbody>
</table>
THREE-DIMENSIONAL MODEL UTILIZATION FOR RECONSTRUCTION IN ORAL AND MAXILLOFACIAL SURGERY: A CASE REPORT

Ista Damayanti 1, Vera Julia2, Benny S. Latief2, Dwi Ariawan2

1Oral and Maxillofacial Surgery Residency Program, Faculty of Dentistry, Universitas Indonesia, Jakarta, Indonesia
2Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Universitas Indonesia, Jakarta, Indonesia

Correspondence e-mail: istadamayant079@gmail.com

ABSTRACT

Three-dimensional (3-D) printing has been identified as an innovative manufacturing technology of functional parts. The 3-D model was produced based on CT- Scan using Osyrix software, where automatic segmentation was performed and converted into STL format. This STL format is then ready to be produced physically, layer-by-layer to create 3-D model. Objective: To report a surgical reconstruction in ablative surgery cases utilizes 3-D model as a reference to work on surgical planning. This method is able to reduce trauma during surgery, simplify surgical procedures, improve reconstruction accuracy, and eventually, shorten operation time. Case Report: We reported a case of a 54 year old male who was diagnosed with ameloblastoma plexiform type at the right region of the mandible. 3D model was produced from patients CT-Scan data for margin cutting guidance and pre-operative plate contouring. Patient under went partial resection of right mandible, extending to the right condyle. The reconstruction performed using 2.7 mm reconstruction plate and temporary condyle prosthesis. The patient had good recovery and acceptable symmetrical result. Conclusion: The 3-D model enabled the surgeon to calculate the requirement of reconstruction plate's type, length and, contour as well as the ideal amount of screw. Furthermore, an accurate pre-contoured plate was obtained prior to the surgery and could be placed directly after tumor removal with minor adjustment.

Key words: ameloblastoma, reconstruction plate, stereo lithography, 3-D model

INTRODUCTION

Reconstruction and correction of defects, either congenital or acquired in the region of cranio-maxillofacial area is a challenge that requires pre-operative planning because the anatomy of the region is very complex and involves sensitive systems, as well as the most important, affecting the appearance of even a small facial deformity. Great care needed to avoid harming the vital anatomical structures the head area. 1,2

The mandible plays a major role in masticatory and phonetic functions, supporting the teeth and defining the contour of the lower third of the face.3 Surgical reconstruction of mandibular bone defects is a routine procedure for rehabilitation of patients with deformities caused by trauma, infection or tumor resection.

Conventional pre-operative planning using cephalometric analysis is based on two-dimensional radiographic and a study models mounted on artikulator.3 However, with the technological advances of Computed Tomography (CT) brought major changes in cranio-maxillofacial surgery.4,8 In cranio-maxillofacial surgery, CT imaging has chosen because it provides the best 3-D data of the bone structure. Cone Beam Computed Tomography (CBCT) and Multislice Computed Tomography (MSCT) has been creating an approach to new treatment and make it possible to obtain a model of the 3-Dimensional (3-D) using the technique of Solid Free Form fabrication (SFF) which the clinical application include orthognathic surgery, reconstruction post traumatic, tumor ablation, and implantology.4,8

At the beginning of the discovery in 1986, the SFF technique was developed in the industrial world to create prototypes of the design of new products. This technique is changing the method of manufacture prototypes that initially require a long time using computer design techniques of rapid prototyping (RP).7 These techniques include selective laser sintering (SLS), fused deposition modeling (FDM), 3D Printing (3DP), and stereolithography (SL).8,11

Currently the SFF technique has evolved significantly, including in the medical field. By using this technique, it is capable to replicate structures with precise geometry from 3-D medical imaging data, such as CT and MRI, into the form Digital Imaging and Communications in Medicine (DICOM) data. DICOM data then processed by software and converted into a file format Standard Tessellation Language (STL).

STL file format then use some software include: OsirIX, mimics, CT-Modeller, Simplant, NobelGuide, AMIRA, iPLAN 3.0, and MagicsRP to create a model of the 3-D prototype.4,7
A CT following 3-Dimensional model reconstruction is the gold standard examination that is currently often used in the Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, University of Indonesia, especially in the cases of ablative surgery. Since commercial products available, 3-Dimensional model is indicated in such reconstruction cases. 3-Dimensional models are obtained using FDM technique. In addition to make a diagnosis and determine a treatment plan, the 3-Dimensional model is also used for pre-bending plate reconstruction in ablative surgery.

OBJECTIVE

Adequate reconstruction should offer replacement of dentition and provide improved deglutition, mastication, and speech and therefore significantly contributes to oral rehabilitation.

To describe the use of 3-Dimensional model in mandibular reconstruction with ameloblastoma or cyst cases. The use of 3-D model is to approximate boundary of tumor-free cut, reference prebending mandibular reconstruction plate and plate measurement.

CASE REPORT

A 54-year-old male patient came with chief complaint mass in his right gum since 7 years ago. The mass initially small, gradually enlarged by the time, no pain, no pus or blood discharge. The patients denied any weight loss in the last 1 year. There were no complains of dizziness, nausea, shortness of breath, diabetes mellitus, hepatitis, ear allergies, masses elsewhere denied. The patients denied the existence of a family member with a similar disease. Based on clinical examination there was facial asymmetry, mass on the right lower jaw, the colour and temperature as same as surrounding. The mass size was 7x6x6.5 cm, smooth surface, solid consistency, fixate, no tenderness, no parasthesia on the right side of the mandible, and no lymph node enlargement palpable.

Following the CT Scan analysis of the mandible, a 3-D model was fabricated (Figure 1).

The surgical plan was implemented with the help of navigation module by cut the 3-Dimensional model to simulate osteotomies and prebending plate performed with undercontour position (Figure 2).

Due to the huge extent of the mass, there was an indication for partial resection of the right side of the mandible and the right condyle. Patient underwent surgery and used 2.7 mm reconstruction plate and condyl prothesis. The surgery was straightforward and quick without any complication intraoperative (Figure 3).

Current panoramic x-rays a week after surgery shows that the plate and condyl prothesis was in a good position and the patient had no complains (figure 4). A month after surgery the wounds healed primarily without serious
complication. Patient was satisfied with his facial appearance and occlusal relationship. Patient was advised to control post operative 2 month and 6 months thereafter (figure 5).

DISCUSSION

The mandibular defects can be caused by tumor, trauma, inflammation, and so forth. The loss of continuity of the mandible not only impairs the facial appearance, but also causes malfunction of mastication, speech, swallowing, and respiration. Thus, mandibular reconstruction surgery is necessary to improve the quality of life of patients with mandibular defects.

The mandible has a unique configuration that varies among individuals in curvature, length, and height. More than to rebuild the continuity, the aim of reconstruction surgery is to recover the original configuration of the mandible so as to optimize the facial contour and the occlusal relationship. Currently, the application of 3-D techniques in mandible reconstruction has simplified this complicated procedure.

The application using 3-D models have been used in the field of oral surgery. It has been used in Cipto Mangunkusumo Hospital/Faculty of Dentistry University of Indonesia. It is used especially in cases of mandibular reconstruction with ameloblastoma or cyst. In this patient, after scanning in the Department of Radiology, CT data was processed on a computer, generates a file in the form of Digital Imaging and Communications in Medicine (DICOM). DICOM data was then converted into STL (stereolithography) data and ready for printing using OsiriX (FDA approved, the European cert). STL data was then produced with FDM printing machines. The printing process lasted several hours as the volume of the model. The final result is the form of 3-Dimensional model made from rigid ABS polymers.

This fabricated procedur didn't delay the surgical treatment schedule. The 3-Dimensional model was cut to simulate the osteotomies during surgery. We also did prebending to the plate at the model with undercontour position.

The surgery was then performed with partial resection of the mandible and right condyle with 2.7mm plate reconstruction and condyle prosthesis. The aim of reconstruction in this patient is to maintain the stability of the mandible, improve the function of the mandible and get a good aesthetic. The operation went smoothly accordin to preoperative scenario plan. The 3-Dimensional model is very helpful in this case to analyze the case, determining the treatment plan and the efficiency of the action during the operation. Post operatively the patient was in good condition and the wound was healing as expected. Patient was also satisfied with the aesthetic achieved and occlusal relationship.

CONCLUSION

The aim of 3D model in the craniomaxillofacial surgery is to reduce trauma during surgery, simplify surgical procedures, improve reconstruction accuracy, decrease morbidity and shorten the time of surgery. By shortening the time of surgery, it can decrease the time of exposure to anesthesia, decrease the amount of blood loss, as well as shorten the time of open wounds, and reduce the cost and duration of patient hospitalization. In this case, the 3-Dimensional model is also documentation for the patient, an educational tool for students and highly effective communication between the doctor-patient. All these benefits can be obtained with the 3-Dimensional model of pre-surgery.

ACKNOWLEDGMENT

The authors thanked Professor Benny S. Latief and drg. Vera Julia, Sp.BM, drg. Dwi Ariawan, Sp.BM, dr. Aditya, Sp.BM for the support given thought the treatment.

REFERENCES
