

# RECONSTRUCTION WITH CUSTOM CAD / CAM PROSTHESIS IN PATIENTS TREATED FOR BENIGN TUMOR INJURIES

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The authors declare no conflicts of interest.

## INTRODUCTION

The Hospital Foundation Metropolitan University (FHUM) submits numerous cases of various patients with alterations in the **TMJ**. Resection of structures that are compromised generate the need for reconstructive **surgery** as an alternative for treatment.

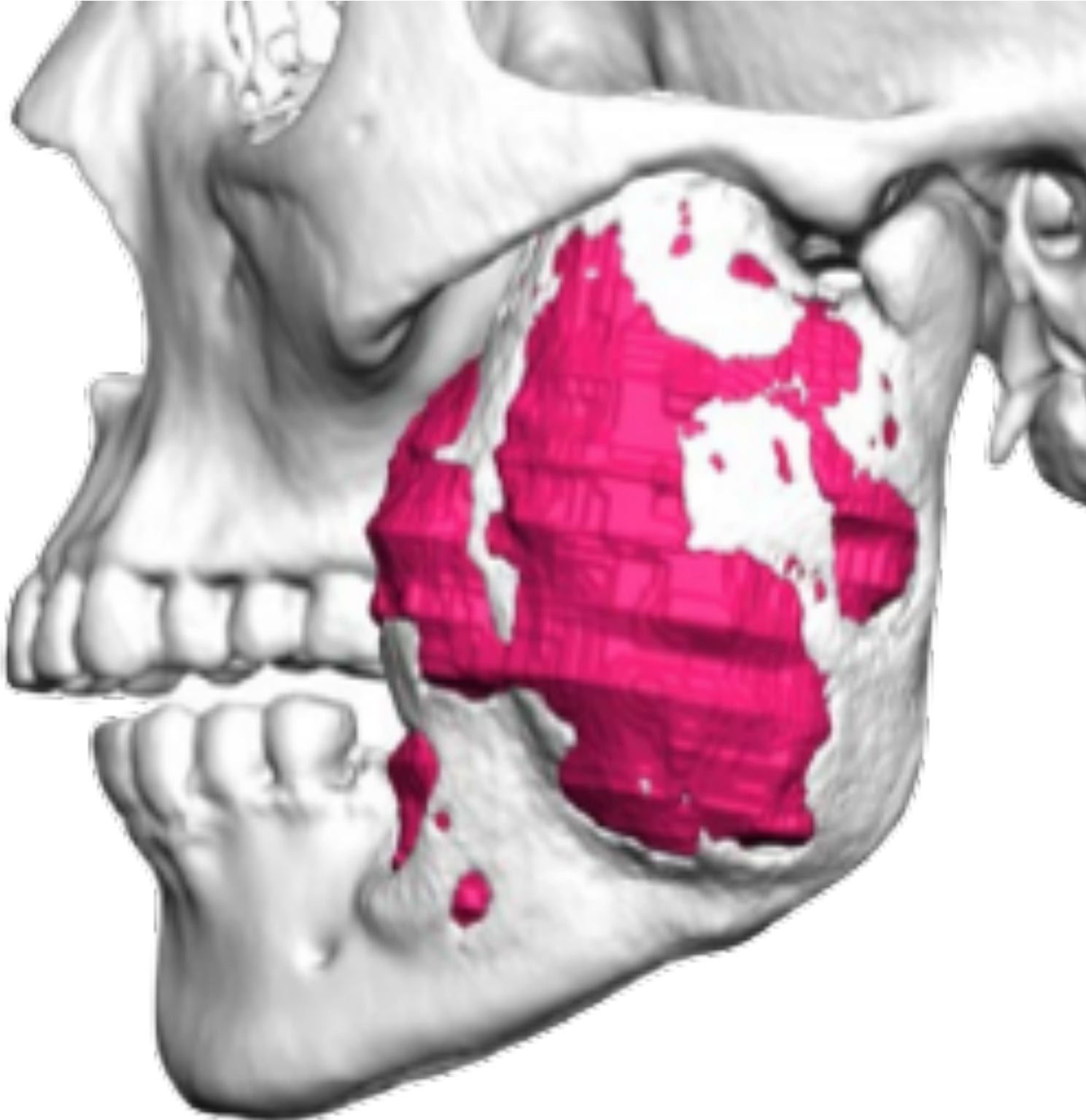


Figure 1. 3D reconstruction

Until recently techniques were slow, complicated and an uncomfortable process for the patient, which didn't allow them to completely recover functionality and esthetically. With the advent of **CAD / CAM** technology, mandibular reconstruction after tumor resections has been facilitated, increasing the success rate and quality of life of patients. However, it is a rarely used strategy for treatment of mandibular **reconstruction** after benign tumor resection in patients at FHUM.

## OBJECTIVE

To **describe** the benefits of personalized CAD / CAM prostheses in the management of total TMJ reconstruction post resection of **benign** tumor lesions.

## MATERIALS AND METHODS

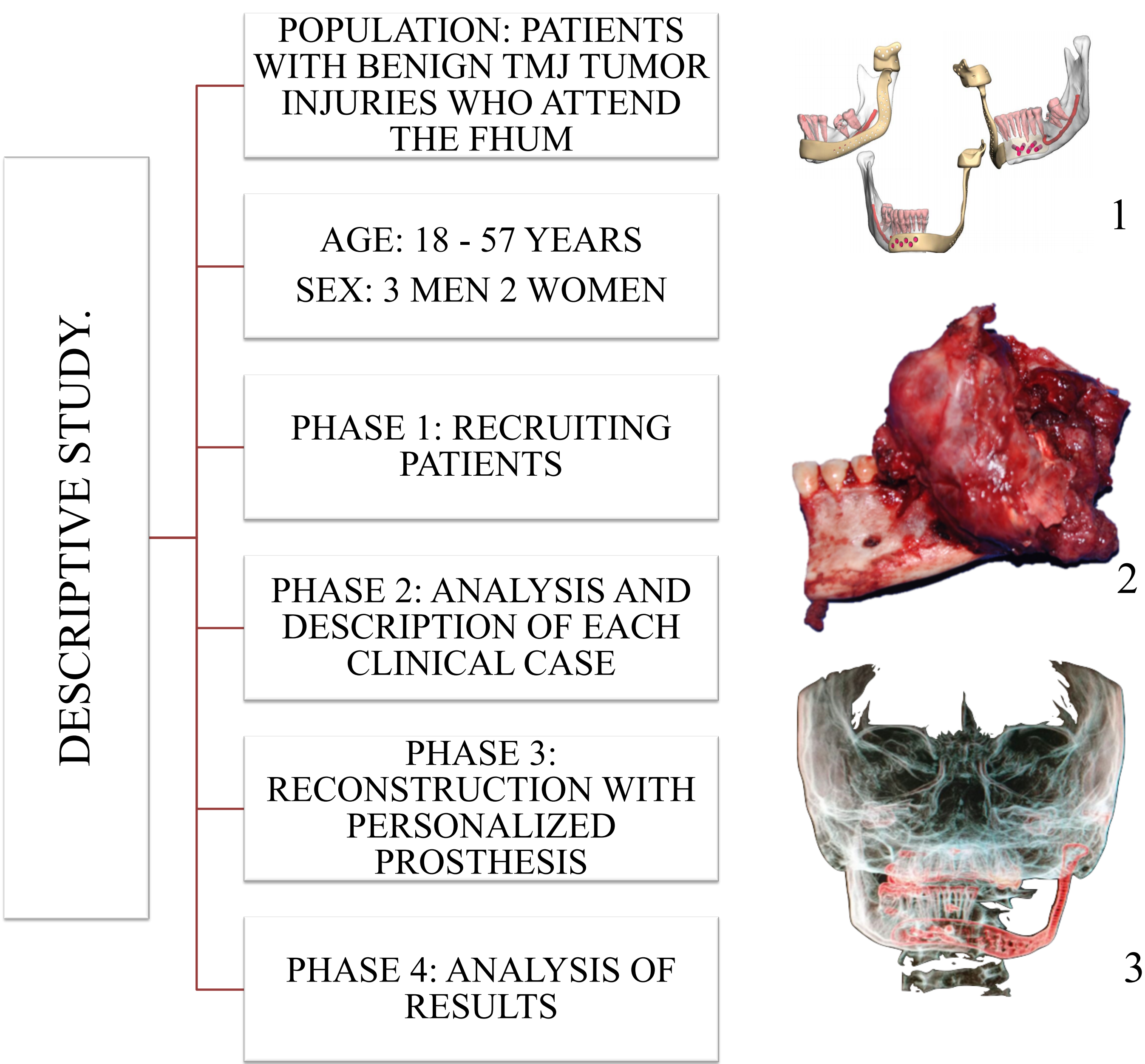


Figure 2. Total reconstruction of TMJ after recession of benign tumor lesions. 1. Planning the placement of the personalized prosthesis. 2. Mandibular resection. 3. Total reconstruction of the left TMJ.

## RESULTS

Patient	Characteristics of population						
	Age	Gender	Side	MIO Pre (mm)	MIO Post(mm)	QL Pre	QL Post
1	42	Male	Uni	5	45	3	9
2	34	Female	Uni	3	40	1	10
3	57	Male	Bi	2	30	1	7
4	18	Female	Bi	3	30	5	9
5	23	Male	Uni	45	45	7	10
6	32	Female	Uni	20	60	7	10

Table 1. Information of the TMJ patients treated. Abbreviations: MIO, maximal incisor opening; QL, quality of life (1-10), Uni, unilateral; Bi, bilateral p = 0.023

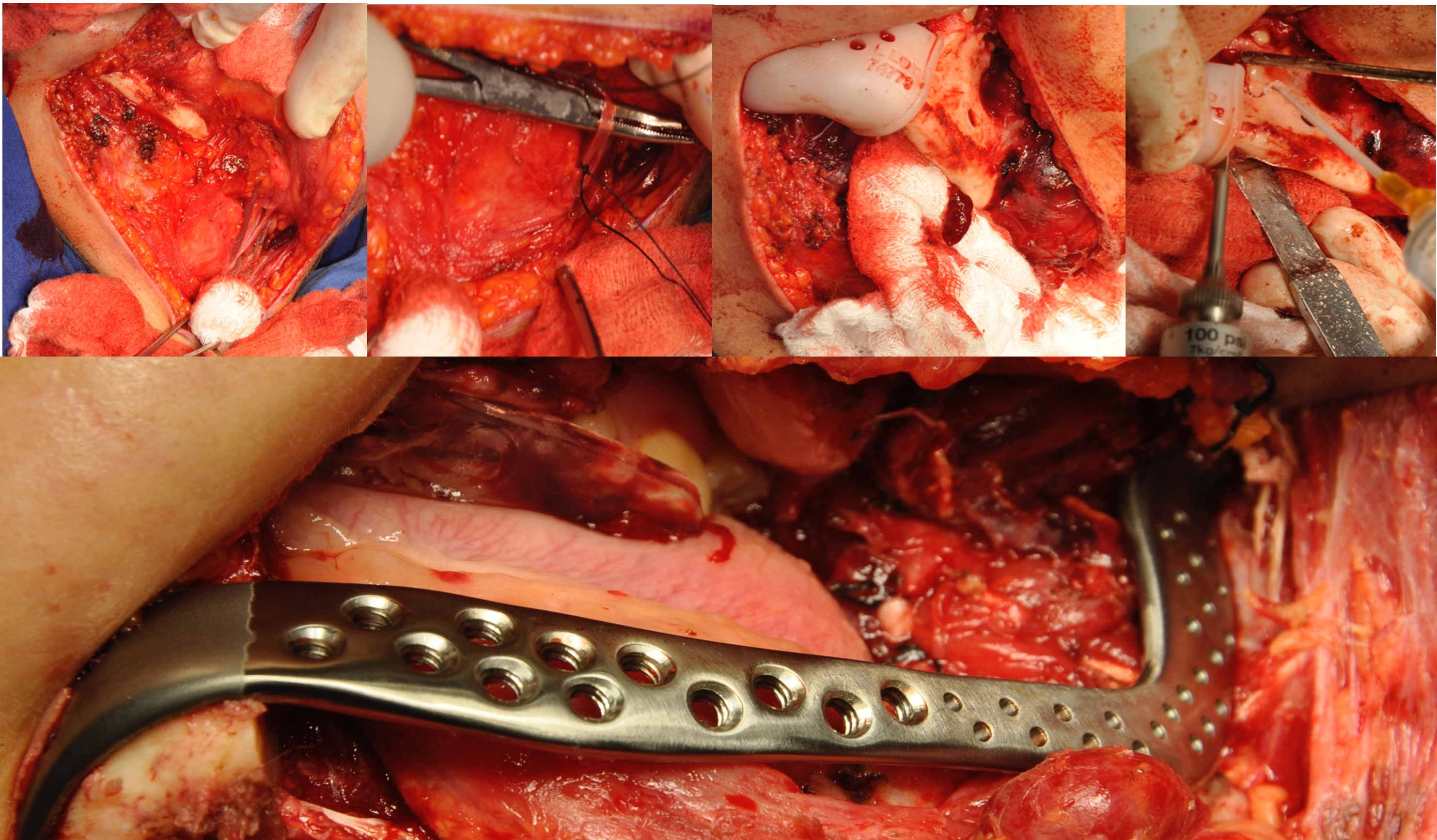


Figure 3: Intraoperative photographs of resection and placement of personalized prostheses.

## DISCUSSION

We observed that the **personalized** CAD / CAM prosthesis gives the patient better quality of life, improving facial aesthetics and joint functionality, as well as an adequate post-operative process without reports of alterations; In agreement with Sánchez et al, 2011, they showed that correct surgical **planning**, new techniques of image and **software** are the keys to success for an articular reconstruction, given as a viable alternative CAD / CAM personalized **prostheses** are an adequate therapeutic tool for total replacement of the TMJ.

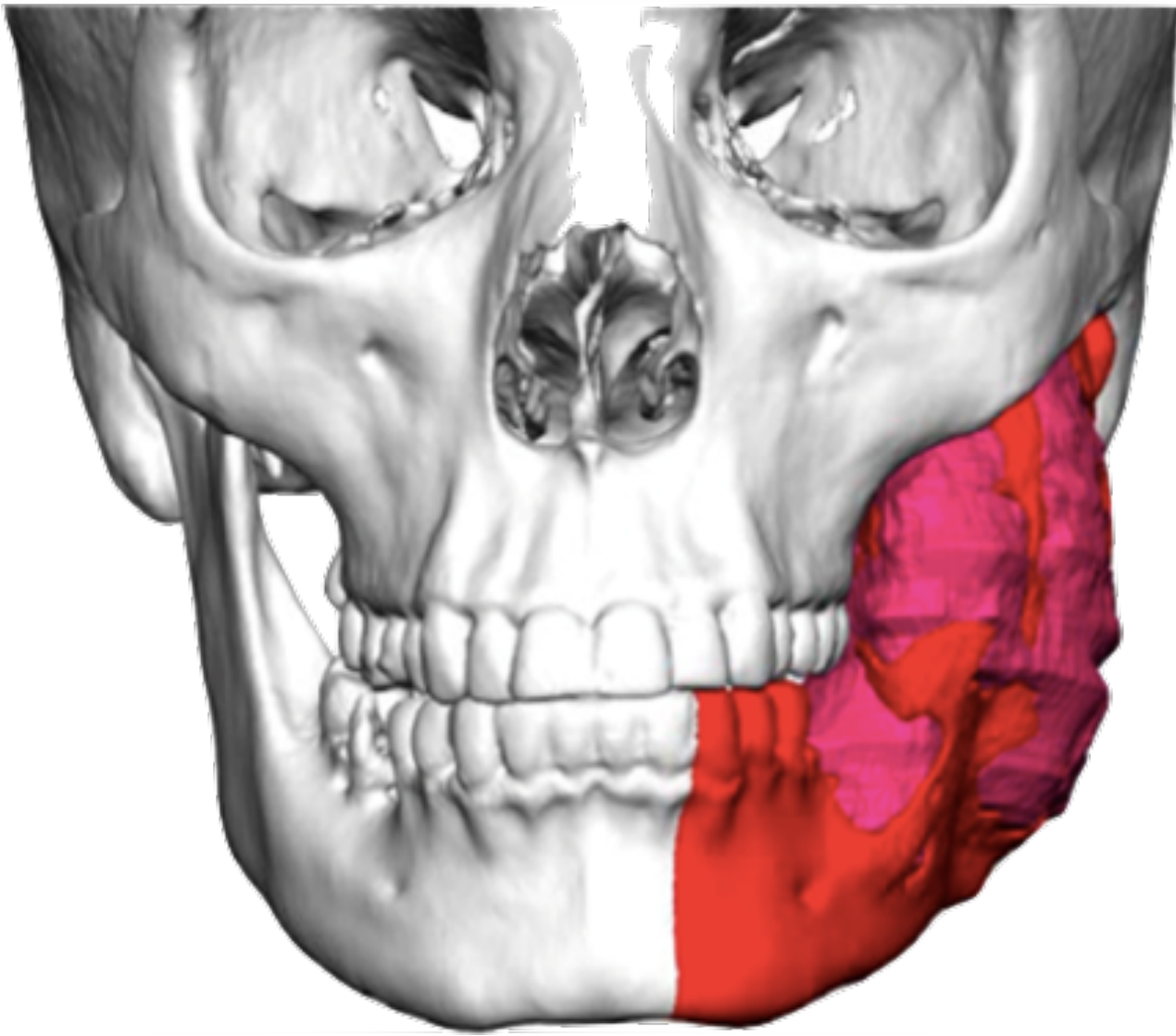


Figure 4. 3D reconstruction of the tumor

## CONCLUSION

CAD / CAM personalized prostheses are an adequate therapeutic **tool** for the total replacement of the temporomandibular joint affected by benign **tumorous** pathologies.

## REFERENCES

1. Wilkes C. Internal Derangements of the Temporomandibular Joint: Pathological Variations. Arch Otolaryngology Head Neck Surg. 1989; 115: p. 469-77.  
2. Moreno P, Beltrán J, Reconstrucción de cuerpo de rama mandibular a través de modelado tridimensional. Journal de Ciencia e Ingeniería, Vol. 6, No. 1, Agosto de 2014, pp. 40-46  
3. Dittel J, Mata C. Reemplazo total de la articulación temporomandibular con prótesis de tipo stock, una alternativa real de tratamiento. Revista médica de costa rica y Centroamérica. 2012