INTRODUCTION
There are several diseases that can affect the human temporomandibular joint (TMJ), among which we highlight the cancer, trauma or fracture, a congenital malformation, osteocondritis [1]. In the United States TMJ diseases may affect 30 million people. While a vast majority of these patients can be treated without surgery, a small group requires surgery [2]. The pain relief and functional recovery of the joint are the most frequent causes for the achievement of the TMJ arthroplasty [3]. Although implants have records of successful long-term widely documented, the recent arrival of failures and complications related to placement of such implants again feed the discussions [4]. The present study used a finite element technique so simulate three variation of geometries in a comercial TMJ implant.

METHODS
One model of the mandible was based on a polymeric replica of a human mandible from the manufacturer Sawbones®. The model was obtained by a 3D shape acquisition of the mandible in a 3D laser scan-ning (Roland LPX 250). The complexity of the geometry involved the completion of ten scans presenting different orientations. The resolution was 0.2 x 0.2mm.

RESULTS AND DISCUSSION
The figure 2 represents the displacement on 3 situations, intact mandible and with three different implants on same position. The results show non symmetric behavior of intact and implanted mandible. The anatomic TMJ implant has a displacement more similar to the intact mandible. On the contrary the semi-anatomic TMJ implant not revealed a displacement more similar to the straight one. The stiffness on implant will be an important factor on strain distribution. The number of screws only affects the strain distribution on the fixation area near the condyle.

Figure 2: Displacement mandible behavior intact and with TMJ implant.

CONCLUSIONS
The study shows is not a requisite to be semi-anatomical implant to have better behavior. There are other mechanical factors that may influence their behavior. Furthermore it was observed that the support of the condyle is an important factor in the mobility of the joint. The anatomial implants showed a uniform distribution of the field of deformation, enabling the integration of bone screws, which may occur with the implant or semi-anatomical rectum. Should be studied to its rigidity and structural integrity, as the anatomial implant is subject to more severe mechanical stresses and may fracture zone in the first hole because of the concentration of tensions.

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REFERENCES