

## Abstract 222

### THREE-DIMENSIONAL VISUALIZATION SYSTEM FOR VITREORETINAL SURGERY: RESULTS FROM A MONOCENTRIC EXPERIENCE AND COMPARISON WITH CONVENTIONAL SURGERY

Poster

Nicolosi C.<sup>[1]</sup>, Vicini G.<sup>[2]</sup>, Soloperto F.<sup>[1]</sup>, Sarati F.<sup>[1]</sup>, Giattini D.<sup>[1]</sup>, Tito F.<sup>[3]</sup>, Bacherini D.<sup>[1]</sup>, Giansanti F.<sup>[1]</sup>

<sup>[1]</sup>Eye Clinic, Neuromuscular and Sense Organs Department, Careggi University Hospital, Florence, Italy ~ Florence ~ Italy,

<sup>[2]</sup>Department of Neurosciences, Psychology, Drug Research and Child Health (NEUROFARBA), University of Florence,

Florence, Italy ~ Florence ~ Italy, <sup>[3]</sup>Department of Biomedical and Surgical Sciences, Section of Ophthalmology, University of Perugia, S. Maria della Misericordia Hospital, Perugia, Italy ~ Perugia ~ Italy

#### Purpose:

To describe the experience of our Centre (Careggi University Hospital, Florence, Italy) in using heads-up three-dimensional (3D) surgical viewing system in vitreoretinal surgery, making a comparison with the conventional microscope surgery.

#### Methods:

We retrospectively analyzed data of 240 patients (240 eyes) with surgical macular diseases (macular hole, epiretinal membrane), retinal detachment or vitreous hemorrhage, who underwent vitreoretinal surgeries by means of NGENUITY 3D Visualization System (Alcon Laboratories Inc.), in comparison with 240 patients (240 eyes) who underwent vitreoretinal surgeries performed with a conventional microscope. All surgeries were performed with standardized procedures, by the same surgeons. We analyzed data over a follow up period of 6 months, comparing the surgical outcomes (best-corrected visual acuity, anatomical success rate and postoperative complication rate) between the two groups.

#### Results:

3D-group included 74 patients with retinal detachment, 78 with epiretinal membrane, 64 with macular hole and 24 with vitreous hemorrhage. There were no significant differences in demographic and clinical characteristics between 3D-group and conventional group. We found no significant differences in outcome measures at three and six months follow up between the two groups ( $p$ -value  $\geq 0.05$  for all comparisons). Surgery durations were similar between the two groups.

#### Conclusions:

In our experience heads-up 3D surgical viewing system provided comparable functional and anatomical outcomes, in comparison with conventional microscope surgery, proving to be a valuable tool for vitreoretinal surgery in the treatment of different retinal diseases.