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Development and utilization of a new device for enucleation- Preliminary results

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Introduction: The indications for enucleations of the eyeball are numerous. In case of intraocular malignancy, enucleation may save the patient's life. In standard procedures the excising of enough length of the optic nerve presents a distinct problem, even for experienced surgeons. **Purpose:** The general purpose of this study was to develop and describe the use of a new device for enucleation. The specific objective is to achieve a long optic nerve stump (at least 10mm in length) during enucleation. **Methods:** The instrument patent process was sponsored by NUPI (Núcleo de Propriedade Intelectual) in partnership with UNIFESP/ SPDM. The legal and technical aspects of the instrument creation were accessorized by a patent office. The instrument patent registry was deposited in December/ 2005 (PI 0506204-7). An engineer in conjunction with the inventor produced the instrument prototype. The prototype consists of a steel device designed in two sizes in order to attend adults and children. The instrument is constituted by a couple of connectable arms that are introduced in the orbital cavity after the globe is freed from extraocular muscles and Tenon's capsule. Each arm has a plaque in its final edge, measuring 10mm that obligates the surgeon to cut the nerve in the adequate length. **Results:** At the present, six enucleations were performed using the device by an only surgeon (VLT). In all cases the instrument has allowed the globe luxation from the orbital cavity and has promoted a good vision of the orbital portion of optic nerve. The plaque attached to the instrument's edge facilitated the optic nerve cutting. All cases presented more than 10mm optic nerve stumps in length, with a mean of 13,5 mm. **Conclusion:** In this sample the new surgical instrument was capable to allow easy observation and division of the optic nerve during enucleation while protecting the nearby orbital structures. In all cases a long optic nerve stump was obtained.