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Service (sector) GlaucomaNº CEP

## **AN ALTERNATIVE INVASIVE METHOD FOR INTRAOCULAR PRESSURE EVALUATION**

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**Purpose:** To validate intraocular pressure (IOP) measurements provide by a sensor placed in the anterior chamber.

**Methods:** Fifteen enucleated porcine eyes were used in this experiment. Each eye had three polyethylene cannulas (ID 0.28 mm; OD 0.61 mm - Intramedic) implanted into the anterior chamber. One cannula was connected to a commercially available sensor (BP 100-iWorx, CB Sciences), other to a water column (manometer) and another one to a syringe filled with saline solution, which permitted controlled IOP variations. The cannulas reached the anterior chamber through a corneal tunnel of 2.0-mm length performed with a 24-gauge needle. IOP was registered online by a sensor linked to a PC (MacLab, AD Instruments) and compared to the water column (gold standard) simultaneously.

**Results:** A total of 115 IOP measurements were performed. The mean (SD) difference between the sensor and water column measurements was 0.08 mmHg (0.93 mmHg). The within-eye correlation coefficient was 0.99 ( $P<0.001$ ). The between-eye correlation coefficient was 0.91 ( $P<0.001$ ).

**Conclusions:** The use of a sensor in the anterior chamber is an accurate and feasible way of measuring IOP in experimental models. It might also be useful to monitor and study IOP in human eye surgeries.