**GENERAL INFORMATION**

1. **Title of Dataset:**

ACCURACY OF BIOMICROSCOPY, ULTRASONOGRAPHY AND SPECTRAL-DOMAIN OCT IN DETECTION OF COMPLETE POSTERIOR VITREOUS DETACHMENT

2. **Author Information**

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3. **Date of data collection:** 1st January 2015 to 31st December 2019.

4. **Geographic location of data collection:** Tuzla Canton, Bosnia and Herzegovina

5. **Information about funding sources that supported the collection of the data:**

No funding was received for this research.

**SHARING/ACCESS INFORMATION**

1. **Licenses/restrictions placed on the data:** NONE

2. **Links to publications that cite or use the data:** In review

3. **Links to other publicly accessible locations of the data:** NONE.

4. **Links/relationships to ancillary data sets:** NONE.

5. **Was data derived from another source?** NO.

6. **Recommended citation for this dataset:** Zvorničanin, Jasmin; Zvorničanin, Edita; Popović, Maja (2022), Accuracy of biomicroscopy, ultrasonography and spectral-domain OCT in detection of complete posterior vitreous detachment, Dryad, Dataset, https://doi.org/10.5061/dryad.h44j0zpnp

**DATA & FILE OVERVIEW**

1. **File List:** Accuracy\_of\_BM\_US\_and\_SD\_OCT\_in\_detection\_of\_complete\_PVD

2. **Relationship between files, if important:** NONE.

3. **Additional related data collected that was not included in the current data package:** NONE.

4. **Are there multiple versions of the dataset?** NO.

A. If yes, name of file(s) that was updated:

i. Why was the file updated?

ii. When was the file updated?

**METHODOLOGICAL INFORMATION**

1. **Description of methods used for collection/generation of data:**

As a part of preoperative preparation, all patients underwent complete systemic evaluation which included general laboratory findings and a complete systemic examination to identify systemic diseases and drug use. In order to maximize the chance of achieving the appropriate vitreous evaluation, a complete preoperative ophthalmological assessment (BM, US and SD-OCT) was performed the day before surgery. First independent investigator performed slit-lamp BM with fully dilated pupils using a 78D lens (Volk Optical Inc., Enterprise Drive Mentor, OH, USA). A PVD was identified by the presence of a Weiss ring and or the definitively detached visible posterior hyaloid membrane. It was classified as presence or absence of PVD on BM.

The second independent investigator performed ocular US using UD-800 (Tomey, Nagoya, Japan). Both vertical and horizontal views were used and the mobility of the posterior vitreous was examined during saccadic eye movements with a high gain (90 dB), real-time, through-the-lid contact technique [12]. A PVD status was considered when posterior vitreous cortex was well defined and completely separated from the retina situated posterior to the equator and at the optic nerve head. It was classified as presence or absence of PVD in US.

Spectral domain OCT images were obtained with fully dilated pupils using Cirrus HD-OCT (Carl Zeiss Meditec, Inc., Dublin, CA) with the Macular Cube 200 × 200 Combo protocol. The protocol consisted of two perpendicular line scans centred at the fovea followed by a cube scan also centred at the fovea. The line scans were 6 mm in the transverse direction, had a 2-mm axial depth, and were composed of 1 000 axial scans each. The cube scan was 6×6 mm, had a 2-mm axial depth, and was composed of 200×200 axial scans. The rationale for applying this protocol has been found in the fact that the use of 6 mm macular SD-OCT scans without including the optic nerve in the scan area can accurately distinguish partial from complete PVD, as long as the scans are centred and not shifted superiorly [17]. Therefore, the SD-OCT scans were considered to have an acceptable position if the top of the scan was at least three “retina thicknesses” above the retinal pigment epithelium at the foveal centre with the image quality of 8 and above. Retina thickness was measured at the nasal edge of the horizontal scan for each eye unless this retina was pathologically thickened or thinned, in which case a temporal edge was selected. This criterion was selected to capture the anterior edge of the premacular bursa. Both investigators interpreted SD-OCT scans independently in a masked fashion. Posterior vitreous detachment was confirmed on SD-OCT when a hyperreflective linear signal was clearly separated from the neuroretina. Disagreement regarding PVD status was resolved by joint review of the macular scans. It was classified as presence or absence of PVD in OCT.

All results of preoperative examinations were compared with the findings of triamcinolone assisted 23 gauge 3-port pars plana vitrectomy (PPV) performed on the following day. All surgeries were performed using Constellation (Alcon Laboratories, TX, USA) and recorded with a recording camera. After initial core vitrectomy, 4mg/0.1ml of triamcinolone acetonide suspension (40mg/ml; Krka-Farma, Zagreb, Croatia) was injected and posterior vitreous cortex evaluated. Vitreous was considered attached when firm vitreous attachment that had to be removed by vitreous cutter suction was noted during the surgery. After complete vitrectomy all patients underwent internal limiting membrane (ILM) peeling and the gas tamponade based on surgical indication. In patients with ERM, the ERM peeling was performed first, followed by staining and peeling of the ILM. The evaluation of PVD status was performed during the surgery and on the surgical video by both examiners [8,13]. It was classified as the presence or absence of PVD during PPV.

2. **Methods for processing the data:**

Binary and categorical variables are reported as absolute numbers and percentages and were tested for differences between groups defined by the PPV-confirmed PVD status using the Chi-squared test. Sensitivity, specificity, positive predictive value, and negative predictive value were calculated for the BM, US and SD-OCT findings, using a PPV as a gold standard. Univariable and multivariable receiver operating characteristics (ROC) to obtain the values of the area under the curve (AUC) and corresponding 95% confidence intervals (95% CI) were based on logistic regression models predicting the PPV-confirmed PPD result. Multivariable models were adjusted for sex and age. AUCs were compared using deLong test.

3. **Instrument- or software-specific information needed to interpret the data:**

The data were analyzed using Stata Statistical Software, version 15.1 (StataCorp LP, College

Station, Texas, USA).

4. **Standards and calibration information, if appropriate:** NONE.

5. **Environmental/experimental conditions:** NONE.

6. **Describe any quality-assurance procedures performed on the data:** All data was double checked when data was acquired and entered in excel file.

7. **People involved with sample collection, processing, analysis and/or submission:**

Jasmin Zvorničanin, Edita Zvorničanin and Maja Popović

**DATA-SPECIFIC INFORMATION FOR:** [Accuracy\_of\_BM\_US\_and\_SD\_OCT\_in\_detection\_of\_complete\_PVD]

1. **Number of variables:** 23

2. **Number of cases/rows:** 123

3. **Variable List:**

1. Age – age of included patients at the time of the surgery.
2. Gender - Male or Female.
3. Side – Right or Left.
4. Indication - According to the indication for surgery, the data were classified into three groups: FTMH – full thickness macular hole, Lamelar MH – lamellar macular hole and ERM – epiretinal membrane.
5. Indication\_coded - Patients were grouped into two groups based on the indication: 1 – FTMH or Lamelar MH and 0 – ERM.
6. IOP – Measured intraocular pressure in millimeters of mercury (mm Hg).
7. IOP20 - Patients were grouped into two groups based on the intraocular pressure (IOP) pressure: 1 – higher than 20 mm Hg and 0 – lower than 20 mm Hg
8. Glaucom - Patients were grouped into two groups based on the glaucoma presence on the hospital admission.
9. Monokulus – patients that operated their only functional eye.
10. Lensstatus - Patients were grouped into two groups based on the crystalline status (presence): cataract or posterior chamber intraocular lens (PCIOL)
11. VA - Visual acuity of operated eye at the hospital admission (decimal category).
12. VAbetter01 - Patients were grouped into two groups based on the visual acuity of the operated eye: 1 – better than 0.1 and 0 – worse than 0.1.
13. VAbetter03 - Patients were grouped into two groups based on the visual acuity of the operated eye: 1 – better than 0.3 and 0 – worse than 0.3.
14. OtherEyeVA - Visual acuity of other eye at the hospital admission (decimal category).
15. OtherEyeWors03 - Patients were grouped into two groups based on the visual acuity of the other eye: 1 – better than 0.3 and 0 – worse than 0.3.
16. LAX – axial length of operated eye measured in millimeters.
17. IOL – dioptric power of theoretical intraocular lens planed for the surgery.
18. LAXcateg2350 - Patients were grouped into two groups based on the axial length: 1 – axial length longer than 23.5 mm and 0 – axial length shorter than 23.5 mm.
19. Vitrectomy – Patients were grouped in two groups based on the presence of Posterior Vitreous Detachment during surgery as described in Methods.
20. Ophthalmoscopy - Patients were grouped in two groups based on the presence of Posterior Vitreous Detachment during ophthalmoscopy as described in Methods.
21. Ultrasound - Patients were grouped in two groups based on the presence of Posterior Vitreous Detachment during ultrasonography as described in Methods.
22. OCT - Patients were grouped in two groups based on the presence of Posterior Vitreous Detachment during Optical Coherence Tomography as described in Methods.
23. Vitreoshisis - Patients were grouped in two groups based on the presence of vitreoshisis during surgery.

4. **Missing data codes:** NONE

5. **Specialized formats or other abbreviations used:**

ERM – epiretinal membrane

FTMH – full thickness macular hole

PCIOL – posterior chamber intraocular lens