POSTERIOR VITREOUS DETACHMENT AND POSTOPERATIVE ENDOPHTHALMITIS

IS ITS ABSENCE A RISK FACTOR FOR SEVERE DISEASE AND WORSE VISUAL PROGNOSIS?

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INTRODUCTION

ENDOPHTHALMITIS

ONE OF THE MOST FEARED COMPLICATIONS FOLLOWING INTRAOCULAR PROCEDURES BECAUSE OF ITS POOR PROGNOSIS ASSOCIATED WITH SEVERE AND IRREVERSIBLE VISION LOSS.

A PREVIOUS STUDY REGARDING ANIMAL MODELS SUGGESTED THAT THE ABSENCE OF POSTERIOR VITREOUS DETACHMENT (PVD) CONTRIBUTED TO THE SEVERITY OF BACTERIAL ENDOPHTHALMITIS. OTHER STUDIES PROPOSED THIS ASSOCIATION IN BLEB-RELATED AND ENDOGENOUS ENDOPHTHALMITIS, BUT TO OUR KNOWLEDGE NO EVIDENCE IS DESCRIBED IN THE LITERATURE ENCOMPASSING ACUTE POSTOPERATIVE ENDOPHTHALMITIS FOLLOWING INTRAVITREAL INJECTION (IVI) AND CATARACT SURGERY, THE PRINCIPAL CAUSES OF ACUTE ENDOPHTHALMITIS.
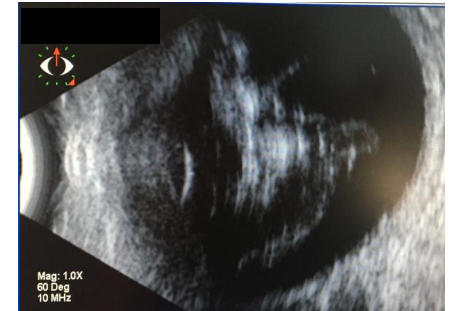

FIGURE 1. B-SCAN OCULAR ULTRASOUND OF A PATIENT WITH ENDOPHTHALMITIS. NOTICE THE VITREOUS CAVITY FILLED WITH MILD TO MODERATE AMPLITUDE POINT ECHOES AND THE PRESENCE OF POSTERIOR VITREOUS DETACHMENT.

46 RETROSPECTIVE COHORT SINGLE-CENTRE STUDY
EYES | CONSECUTIVE PATIENTS

ADMITTED WITH PRESUMED ACUTE ENDOPHTHALMITIS (CLINICAL SIGNS AND OCULAR ULTRASOUND)

JANUARY 2020 AND DECEMBER 2022 IN CENTRO HOSPITALAR E UNIVERSITÁRIO SÃO JOÃO

EXCLUDED: ENDOGENOUS ENDOPHTHALMITIS; POSTTRAUMATIC ENDOPHTHALMITIS; ENDOPHTHALMITIS CAUSED BY OTHER SURGICAL INTERVENTION THAN IVI AND CATARACT SURGERY (PHACOEMULSIFICATION)

27 EYES WITH ACUTE ENDOPHTHALMITIES FOLLOWING IVI (n=22) AND CATARACT SURGERY (n=5)

VARIABLES: AGE, GENDER, SYSTEMIC AND OCULAR COMORBIDITIES, TIME IN DAYS UNTIL THE ONSET OF SYMPTOMS, TIME UNTIL VITRECTOMY, TIME OF FOLLOW-UP

STATUS OF PVD -> DEFINED BY OCULAR ULTRASOUND AS **WITH OR WITHOUT PVD**

(EYES PREVIOUSLY VITRECTOMIZED (1) WERE INCLUDED IN THE GROUP WITHOUT PVD)

BEST CORRECTED VISUAL ACUITY (BCVA) - AT ADMISSION/ PRE-OPERATIVE/ POSTOPERATIVE/ LAST FOLLOW-UP

SNELLEN CHART → logMAR

COUTING FINGERS (CF) = logMAR +1.9 | HAND MOTION (HM) = logMAR +2.3 | LIGHT PERCEPTION (LP) = logMAR +2.7 | NO LIGHT PERCEPTION (NLP) = logMAR +3

DICHOTOMISED AS GOOD OR POOR (CF OR WORSE) VISUAL OUTCOME

PATIENTS WITH ACUTE POSTOPERATIVE ENDOPHTHALMITIS AFTER IVI (N=22) AND CATARACT SURGERY (N=5) WERE SIMILAR.

TABLE 1. DEMOGRAPHIC AND CLINICAL CHARACTERIZATION OF THE PATIENTS WITH ACUTE POSTOPERATIVE ENDOPHTHALMITIS AFTER IVI AND CATARACT SURGERY.
SD – STANDARD DEVIATION; IQR – INTERQUARTILE RANGE; BCVA – BEST CORRECTED VISUAL ACUITY; PVD – POSTERIOR VITREOUS DETACHMENT

AGE, MEAN ± SD (YEARS)	75.2 ± 10
GENDER (WOMEN), N (%)	14 (51.9)
TIME UNTIL ONSET OF SYMPTOMS, MEDIAN (IQR) (DAYS)	4.0 (5)
PARS PLANA VITRECTOMY (YES), N (%)	20 (74.1)
TIME UNTIL VITRECTOMY, MEDIAN (IQR) (DAYS)	1.0 (2)
TIME OF FOLLOW-UP, MEDIAN (IQR) (MONTHS)	6 (10.3)
PRESENTING BCVA, MEAN ± SD (logMAR)	2.2 ± 0.6
FINAL BCVA, MEAN ± SD (logMAR)	1.4 ± 0.9
DID VA IMPROVE? (Gain ≥ 0.2 logMAR)	
YES, N (%)	16 (76.2)
NO, N (%)	5 (23.8)
FINAL VISUAL OUTCOME	
POOR, N (%)	10 (43.5)
GOOD, N (%)	13 (56.5)
STATUS OF PVD	
WITH PVD, N (%)	7 (29.2)
WITHOUT PVD, N (%)	17 (70.8)

PATIENTS WITH ACUTE POSTOPERATIVE ENDOPHTHALMITIS AFTER IVI (N=22) AND CATARACT SURGERY (N=5) WERE SIMILAR.

TABLE 2. CLINICAL FEATURES AND OUTCOMES ACCORDING TO STATUS OF PVD

SD – STANDARD DEVIATION; IQR – INTERQUARTILE RANGE; BCVA – BEST CORRECTED VISUAL ACUITY; PVD – POSTERIOR VITREOUS DETACHMENT; VA – VISUAL ACUITY
[a] MANN-WHITNEY U TEST; [b] FISHER'S EXACT TEST

	WITH PVD (n=7)	WITHOUT PVD (n=17)	*P*-VALUE
AGE, MEDIAN (IQR) (YEARS)	79.5 (11)	76 (15)	0.710 [a]
GENDER (WOMEN), N (%)	5 (71.4)	9 (52.9)	0.653 [b]
TIME UNTIL ONSET OF SYMPTOMS, MEDIAN (IQR) (DAYS)	4.5 (5)	4 (5)	0.671 [a]
PARS PLANA VITRECTOMY (YES), N (%)	5 (71.4)	14 (82.4)	0.608 [b]
TIME UNTIL VITRECTOMY, MEDIAN (IQR) (DAYS)	0.5 (2)	2 (2)	0.091 [a]
TIME OF FOLLOW-UP, MEDIAN (IQR) (MONTHS)	5.5 (9)	7 (16)	0.799 [a]
PRESENTING BCVA, MEDIAN (IQR) (logMAR)	2.3 (0.5)	2.3 (0.4)	0.123 [a]
FINAL BCVA, MEDIAN (IQR) (logMAR)	1.0 (1.6)	1.9 (1.3)	0.142 [b]
DID VA IMPROVE?			
YES, N (%)	7 (100)	8 (61.5)	0.114 [b]
NO, N (%)	0 (0)	5 (38.5)	
FINAL VISUAL OUTCOME			
POOR, N (%)	2 (28.6)	8 (53.3)	0.381 [b]
GOOD, N (%)	5 (71.4)	7 (46.7)	

CONCLUSION

THERE WAS NOT A SIGNIFICANT STATISTICAL DIFFERENCE BETWEEN LACK OF PVD AND SEVERE ACUTE POSTOPERATIVE ENDOPHTHALMITIS

HOWEVER, IN OUR COHORT ALL PATIENTS WITH PVD IMPROVED THEIR FINAL VA.

TO OUR KNOWLEDGE, THIS IS THE FIRST STUDY TO PROPOSE THIS ASSOCIATION IN PATIENTS WITH ACUTE ENDOPHTHALMITIS FOLLOWING IVI AND CATARACT SURGERY.

PERHAPS EARLY VITRECTOMY WITH INDUCTION OF PVD MAY IMPROVE FINAL VISUAL OUTCOME.

FUTURE STUDIES SHOULD INVESTIGATE THE POSSIBLE RELATION BETWEEN THE STATUS OF PVD AND THE SEVERITY OF POSTOPERATIVE ENDOPHTHALMITIS AND VISUAL OUTCOME.

GIVEN THE LIMITED NUMBER OF PATIENTS, MULTICENTER STUDIES ARE HIGHLY RECOMMENDED.