

PVD. Histopathological examination of the enucleated eye showed no PVD. Decimal visual acuity improved by 3 lines or more in 6 patients and remained lower than 0.1 in 5 patients.

Conclusion: BRE developed frequently in eyes with no PVD. The absence of PVD may be a risk factor of severe BRE.

#### P1-07.

### Comprehensive genetic analysis of IgG4-related ophthalmic diseases by RNA sequencing

(大学院博士課程 1年臨床医学系 眼科学分野)

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Purpose: High-throughput RNA sequencing uses massively parallel sequencing that allows unbiased analysis of both genome-wide transcription levels and mutation status of tumors. Immunoglobulin G4-related ophthalmic disease (IgG4-ROD) is a fibroinflammatory disease characterized by enlargement of ocular adnexal tissues, infiltration of IgG4-positive plasmacytes, and elevated serum IgG4 levels. Comprehensive analysis of gene abnormalities in IgG4-ROD may play an important role in discovering new biomarkers. In this study, we analyzed RNA expression levels in biopsy specimens of IgG4-ROD.

Methods: This study included 3 patients who were diagnosed with IgG4-ROD at Tokyo Medical University Hospital. Total RNA was extracted from specimens obtained by biopsy and per-tumor adipose tissues as control, and quantified using NextSeq 500.

Results: By comparing RNA expression levels in the biopsy specimens with those in control tissues and extracting genes with an expression ratio of 16 or more and an expression difference of 16 or more, expression differences were observed in 221 genes. Pathway analysis with these genes revealed a difference in

pathways related to immune systems and extracellular matrix organization. Among them we identified seven genes that were associated with IgG4-ROD.

Conclusion: In biopsy specimens of IgG4-ROD, we identified novel gene abnormalities that are associated with extracellular matrix degradation and B cell receptors. These data may contribute to future development of new biomarkers for diagnosis and molecular-targeted drugs to treat this disease.

#### P1-08.

### Identification of novel microRNAs for distinguishing orbital mucosa-associated lymphoid tissue lymphoma from IgG4-related ophthalmic disease

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Purpose: It is important to distinguish orbital mucosa-associated lymphoid tissue lymphoma (MALT) and benign tumors such as IgG4 related ophthalmic disease (IgG4-ROD) early in the course, since work-up as well as treatment can vary greatly. Although microRNAs (miRNAs) play an important role in the regulation of carcinogenesis and inflammation, the relation between miRNA and orbital lymphoproliferative diseases remains unknown. In this study, we aimed to identify differentially expressed miRNAs and pathways in biopsied specimens and peripheral blood between cases with orbital MALT and IgG4-ROD.

Methods: 38 orbital lymphoproliferative tumors comprising orbital MALT (n=21), IgG4-ROD (n=17) were analyzed by 3D-Gene miRNA microarray.

Results: In serum, IgG4-ROD increased 18 miRNAs, decreased 3 miRNAs compared to MALT. In the tissue, IgG4-ROD increased 23 miRNAs, decreased 3 miRNAs compared to MALT. Pathway analysis with these genes revealed a difference in pathways related to extracellular matrix.