Okayama University Medical Research Updates （OU-MRU） 2019.12 Vol.73

Source: Okayama University (JAPAN), Public Relations Division

For immediate release: 4 December 2019

Okayama University research: Primary intraocular lymphoma does not always spread to the central nervous system

(Okayama, 4 December) **Researchers at Okayama University report in the *Journal of clinical and experimental hematopathology* that primary intraocular lymphoma, a cancer in the eye, does not always develop into central nervous system lymphoma. In addition, the scientists confirmed that there is no marker available to predict when the former will develop into the latter.**

Primary intraocular lymphoma (PIOL) is a cancer in the eye originating in lymphocytes, cells of the immune system that fight infections; lymphoma is the condition when lymphocytes grow in an uncontrolled way. Often, PIOL develops into central nervous system lymphoma — uncontrolled growth of lymphocytes in the nervous system in the brain and the spinal cord. It is not clear, however, whether this development always occurs. Now, Professor MATSUO Toshihiko (eye doctor) and Assistant Professor TANAKA Takehiro (pathologist) from Okayama University have addressed the question whether there are PIOLs that do not develop central nervous system lymphoma. They observed a group of patients, and found that in the small number of cases, PIOL does not spread to the central nervous system. Importantly, PIOL has a good prognosis if it does not develop into central nervous system lymphoma.

The researchers studied 22 patients (14 women, 8 men) for up to 14 years. The patients' ages ranged from 42 to 84 years at the time of the first eye examination. In 12 patients, both eyes were affected by PIOL; in the others, only one eye. All 22 patients underwent vitrectomy (surgery in which some or all of the vitreous gel between the retina and the lens in the middle of the eye is removed) after diagnosis of PIOL.

Of the 22 patients, 17 developed central nervous lymphoma. For 3 of the 5 patients who did not, the follow-up period was relatively short (up to 3 years). The follow-up periods for the other 2 patients were 5 and 11 years; these patients did not undergo chemotherapy or radiation of the eye. Based on these long-term follow-up results, Matsuo and Tanaka concluded that PIOL does not necessarily develop into central nervous system lymphoma.

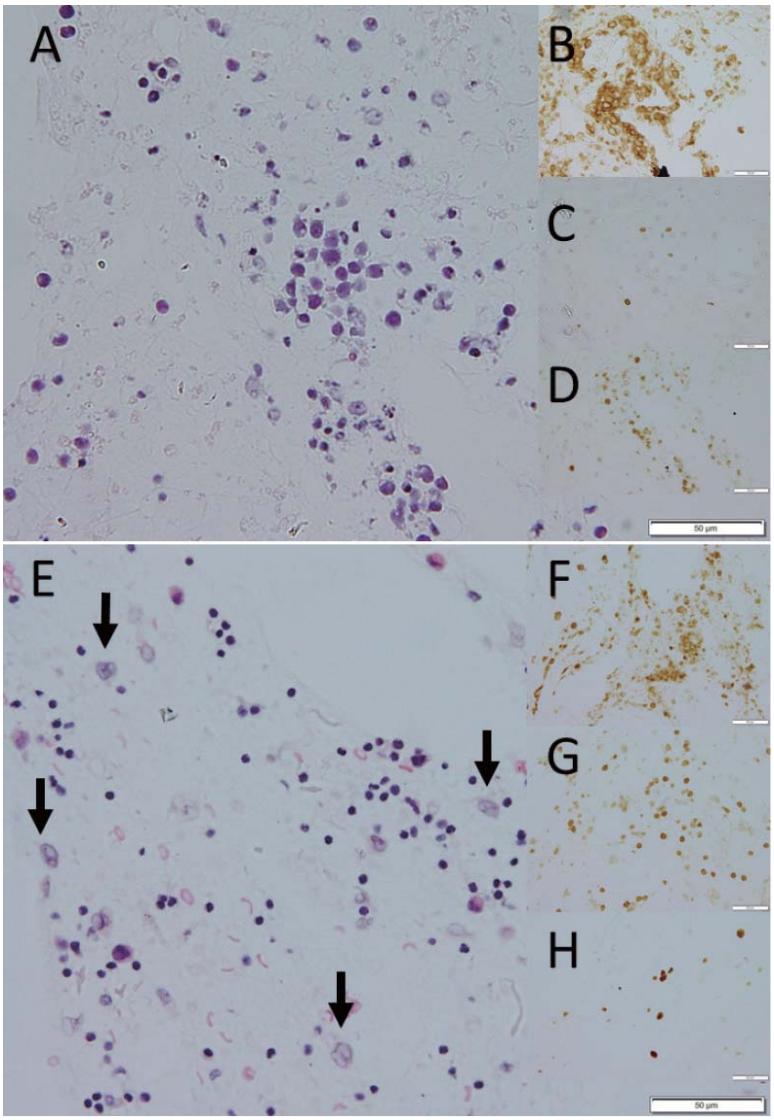
The scientists also examined whether the presence of a protein called CD5 in specimens taken during vitrectomy surgery are a marker of central nervous system lymphoma. But both patients with CD5-positive and patients with CD5-negative tests developed central nervous system lymphoma, which made Matsuo and Tanaka conclude that "at present, there is no marker available to predict whether a patient with PIOL will develop central nervous system lymphoma."

OKAYAMA University
1-1-1 Tsushima-naka, Kita-ku, Okayama 700-8530 Japan

Background

Primary intraocular lymphoma (PIOL)

Primary intraocular lymphoma (PIOL) is a cancer that involves the retina, the vitreous chamber in the middle of the eye and/or the optic nerve. It manifests itself as opacity of the gel in the vitreous chamber, which can be accompanied by lesions in the retina, in subretinal pigment epithelium (beneath the pigmented cell layer just outside the retina), or in the optic nerve. Often, PIOL develops into central nervous system lymphoma, simultaneously or at a later time. Professor MATSUO Toshihiko and Assistant Professor TANAKA Takehiro from Okayama University have now investigated if PIOL also occurs without development into central nervous system lymphoma, and whether a marker for such development exists.



Caption

Pathological staining of vitrectomy cell blocks for two cases (top and bottom) where PIOL occurred without the development of central nervous system lymphoma.

OKAYAMA University
1-1-1 Tsushima-naka, Kita-ku, Okayama 700-8530 Japan

Reference

Toshihiko Matsuo, Takehiro Tanaka. Are there primary intraocular lymphomas that do not develop into central nervous system lymphomas?. *Journal of Clinical and Experimental Hematopathology*, Vol. 59 No.4, 2019.
DOI : https://doi.org/10.3960/jslrt.19019
https://www.jstage.jst.go.jp/article/jslrt/advpub/0/advpub_19019/_article/-char/ja/

Reference (Okayama Univ. e-Bulletin): Professor MATSUO's team

e-Bulletin Vol.8 : Photoelectric dye-coupled thin film as a novel type of retinal prosthesis
OU-MRU Vol.8 : Light-responsive dye stimulates sight in genetically blind patients
OU-MRU Vol.39 : Successful test of retinal prosthesis implanted in rats
OU-MRU Vol.47 : Candidate genes for eye misalignment identified
OU-MRU Vol.53 : Successful implantation and testing of retinal prosthesis in monkey eyes with retinal degeneration
OU-MRU Vol.70 : Prosthetics for Retinal Stimulation

Correspondence to

Professor MATSUO Toshihiko, M.D., Ph.D.
Ophthalmology, Okayama University Medical School and Graduate School of Interdisciplinary Science and Engineering in Health Systems,
2-5-1 Shikata-cho, Kita-ku, Okayama 700-8558, Japan
E-mail: matsuot@cc.okayama-u.ac.jp

Professor MATSUO Toshihiko

Further information

Okayama University
1-1-1 Tsushima-naka , Kita-ku , Okayama 700-8530, Japan
Public Relations Division
E-mail: www-adm@adm.okayama-u.ac.jp
Website: http://www.okayama-u.ac.jp/index_e.html
Okayama Univ. e-Bulletin: http://www.okayama-u.ac.jp/user/kouhou/ebulletin/
We love OKAYAMA UNIVERSITY:
https://www.youtube.com/watch?v=7cXlttQIk3E
Okayama University Image Movie (2018):
https://www.youtube.com/watch?v=WmyqOTuigBs

Okayama University Medical Research Updates （OU-MRU）

The whole volume : OU-MRU (1-)

Vol.1 : Innovative non-invasive 'liquid biopsy' method to capture circulating tumor cells from blood samples for genetic testing
Vol.2 : Ensuring a cool recovery from cardiac arrest
Vol.3 : Organ regeneration research leaps forward
Vol.4 : Cardiac mechanosensitive integrator
Vol.5 : Cell injections get to the heart of congenital defects
Vol.6 : Fourth key molecule identified in bone development
Vol.7 : Anticancer virus solution provides an alternative to surgery
Vol.8 : Light-responsive dye stimulates sight in genetically blind patients
Vol.9 : Diabetes drug helps towards immunity against cancer
Vol.10 : Enzyme-inhibitors treat drug-resistant epilepsy
Vol.11 : Compound-protein combination shows promise for arthritis treatment
Vol.12 : Molecular features of the circadian clock system in fruit flies
Vol.13 : Peptide directs artificial tissue growth
Vol.14 : Simplified boron compound may treat brain tumours
Vol.15 : Metamaterial absorbers for infrared inspection technologies
Vol.16 : Epigenetics research traces how crickets restore lost limbs
Vol.17 : Cell research shows pathway for suppressing hepatitis B virus
Vol.18 : Therapeutic protein targets liver disease
Vol.19 : Study links signalling protein to osteoarthritis
Vol.20 : Lack of enzyme promotes fatty liver disease in thin patients
Vol.21 : Combined gene transduction and light therapy targets gastric cancer
Vol.22 : Medical supportive device for hemodialysis catheter puncture
Vol.23 : Development of low cost oral inactivated vaccines for dysentery
Vol.24 : Sticky molecules to tackle obesity and diabetes
Vol.25 : Self-administered aroma foot massage may reduce symptoms of anxiety
Vol.26 : Protein for preventing heart failure
Vol.27 : Keeping cells in shape to fight sepsis
Vol.28 : Viral-based therapy for bone cancer
Vol.29 : Photoreactive compound allows protein synthesis control with light
Vol.30 : Cancer stem cells' role in tumor growth revealed
Vol.31 : Prevention of RNA virus replication
Vol.32 : Enzyme target for slowing bladder cancer invasion
Vol.33 : Attacking tumors from the inside
Vol.34 : Novel mouse model for studying pancreatic cancer
Vol.35 : Potential cause of Lafora disease revealed
Vol.36 : Overloading of protein localization triggers cellular defects
Vol.37 : Protein dosage compensation mechanism unravelled
Vol.38 : Bioengineered tooth restoration in a large mammal
Vol.39 : Successful test of retinal prosthesis implanted in rats
Vol.40 : Antibodies prolong seizure latency in epileptic mice
Vol.41 : Inorganic biomaterials for soft-tissue adhesion

OKAYAMA University
1-1-1 Tsushima-naka, Kita-ku, Okayama 700-8530 Japan

Japan. Committed to SDGs | 岡山大学 OKAYAMA UNIVERSITY | SUSTAINABLE DEVELOPMENT GOALS

Okayama University supports the Sustainable Development Goals

OKAYAMA University
1-1-1 Tsushima-naka, Kita-ku, Okayama 700-8530 Japan

◆About Okayama University

Okayama University is one of the largest comprehensive universities in Japan with roots going back to the Medical Training Place sponsored by the Lord of Okayama and established in 1870. Now with 1,300 faculty and 13,000 students, the University offers courses in specialties ranging from medicine and pharmacy to humanities and physical sciences.

Okayama University is located in the heart of Japan approximately 3 hours west of Tokyo by Shinkansen.

Website: http://www.okayama-u.ac.jp/index_e.html

Japan（日本）

Hirofumi Makino, M.D., Ph.D.
President , Okayama University

Japan. Committed to SDGs | 岡山大学 OKAYAMA UNIVERSITY | SUSTAINABLE DEVELOPMENT GOALS

"Okayama University supports the Sustainable Development Goals"

Okayama University holds the "SiEED Conference 2019" to provide an opportunity to hold discussions with globally competent innovators

News **Conference Movie(You Tube)**

SiEED STRIPE intra & Entrepreneurship Empowerment and Development

OKAYAMA University
1-1-1 Tsushima-naka, Kita-ku, Okayama 700-8530 Japan