

## Fighting Severe Hemorrhagic Diseases with State-of-the-Art Medicine!

### Diseases of Super-Aged Societies

The aging of society is progressing in Japan faster than anywhere else in the world, and the elderly are susceptible to various diseases. Once bacteria enter a human body, the body creates antibodies toward that bacterium. This enables the prompt removal of the same bacteria from the body the next time they enter the body. However, with aging, antibodies can be produced against a person's own protein, and the action of the antibody can inhibit the function of that protein or result in the protein's immediate removal.

### Hemorrhagic Diseases with Severe Symptoms

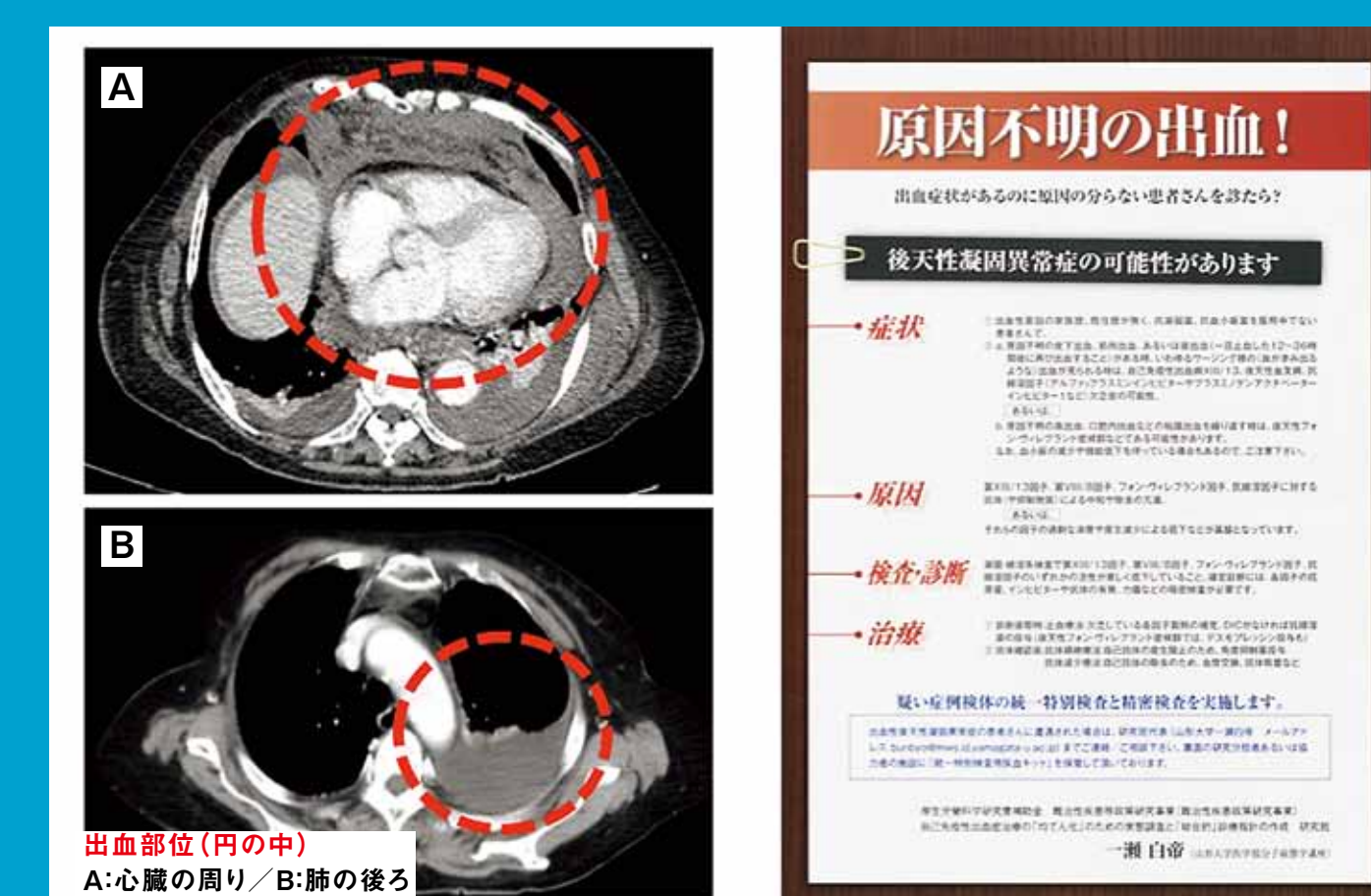
A protein called "coagulation factor XIII" is required to stop bleeding when a person sustains an injury or undergoes surgery. However, if antibodies are created against one's own proteins, then there can frequently be subcutaneous hemorrhaging or even bleeding into one's muscles, head or the abdominal cavity, resulting in death. We named this disease "Autoimmune haemophilia-like disease (or haemorrhaphilia) due to anti-factor XIII antibodies."

### Efforts in Cooperation with the Central Government

Ever since we first found a patient 12 years ago who had this disease, we have been receiving government grants and been conducting studies like the nationwide investigation of the number of patients and cases of this disease in Japan, development of tests and means of diagnosis, and development and proposal of ways to stop bleeding or to remove the antibodies. As a result, a drug that is effective against the hemorrhaging through this disease was approved by the government two years ago and is now available for use in Japan. Furthermore, this disease was added in July 2015 to the list of designated intractable diseases that are medical expense subsidy targets. We would like to continue investigating the cause of antibody production toward the coagulation factor XIII protein.

Professor

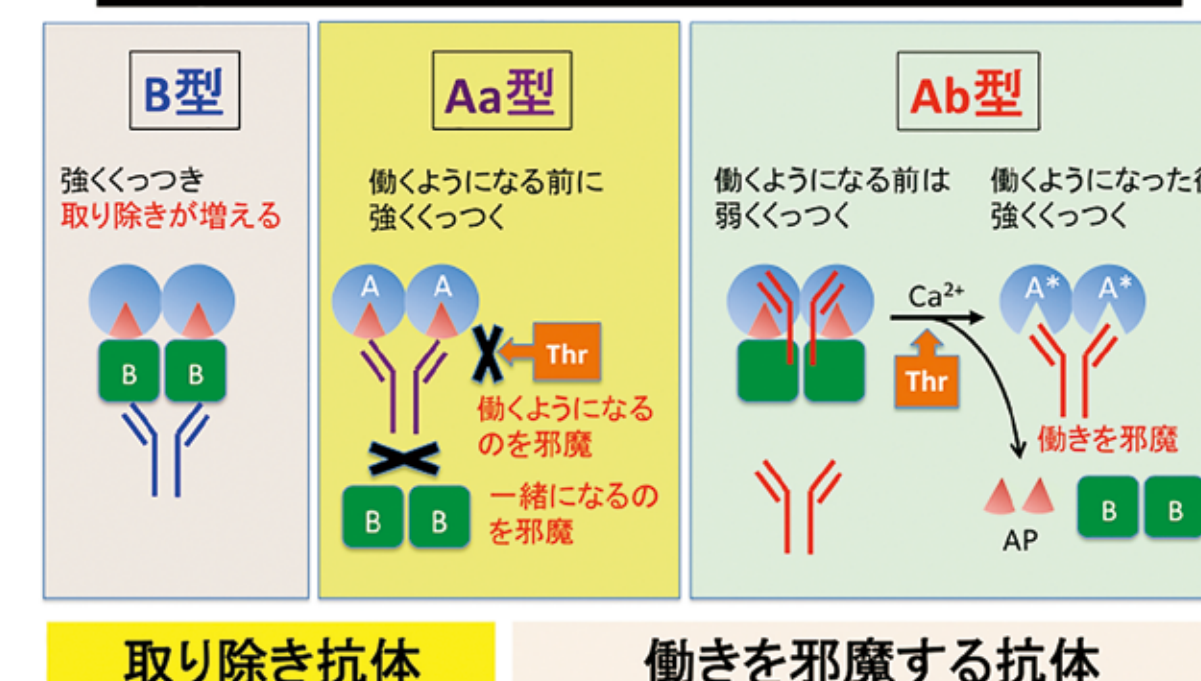
Akitada Ichinose



(On left) Various hemorrhagic symptoms that appeared in a patient  
(On right) Notice sent every year to about 2,000 hospitals throughout Japan regarding the survey of hemorrhagic diseases

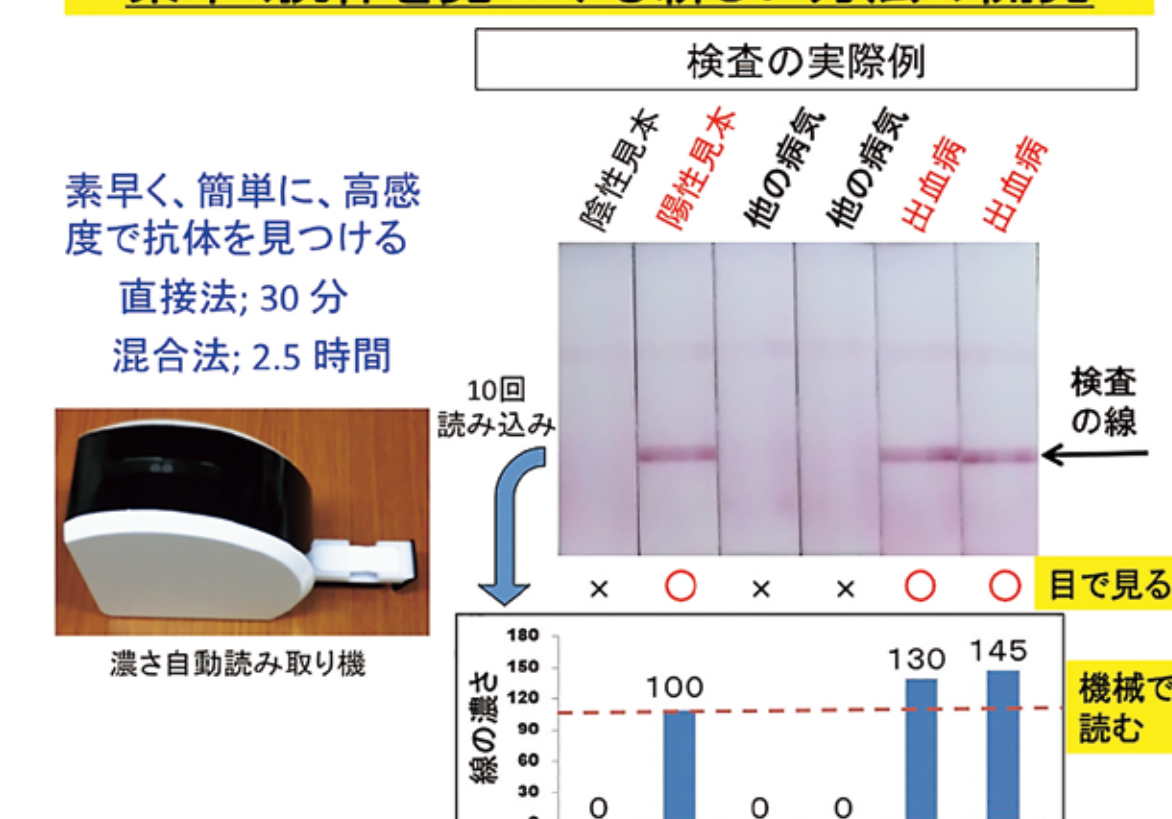
### 第13因子に対する抗体の悪い影響

第13因子タンパク質に悪い影響を与える抗体には、3種類ある



The adverse effects of antibodies that bring about this hemorrhagic disease with severe symptoms

### 素早く抗体を見つける新しい方法の開発



A new test method for prompt identification of antibodies with adverse effects

Providing New Medical Care with Friendly Service

Faculty of Medicine