

A Team from Tokyo Medical and Dental University Performed the World's First Organoid Transplantation

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In July 2022, a team at Tokyo Medical and Dental University (TMDU) announced the world's first clinical 'mini-organ' transplantation into a patient with ulcerative colitis which was in an untreatable condition. It is the world's first organoid transplantation for refractory ulcerative colitis, which is difficult to treat with steroids, and the first organoid transplant performed in a human. The mini organ, which is a part of a clinical trial, is made from patient cells and performs similar tasks to the large intestine.

A healthy colonic mucosa from the patient's vicinity was used to culture into spherical organoids and the same was transplanted into the same patient's colon by colonoscopy. The patient made a good progress and was discharged from the hospital the next day. This clinical study used the patient's own cells, which had the advantage of avoiding transplant rejection. In addition, since colonoscopy was used for collection and transplantation, minimally invasive treatment was possible without the need for laparotomy.

Dr. Mamoru Watanabe, Vice president and distinguished professor at TMDU stated, "If our first-in-human research using organoids transplantation yields good results, we expect that the development of organoid medicine for intractable diseases of the digestive tract such as Crohn's disease will progress."

Dr. Ryuichi Okamoto, a professor of the Department of Gastroenterology and Hepatology, Graduate School of Medical and Dental Sciences said, "We embarked on the path of developing new methods for treating intractable diseases. This treatment should establish the efficacy and safety as soon as possible and deliver to the patients."

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