Genetically-modified pig kidney transplants into live patients may be next in wake of successful transplants into brain-dead patients

Surgeons in Birmingham and New York City on [August 16] reported advances in the transplantation of organs obtained from pigs that have been genetically modified to prevent rejection after they are implanted in humans.

Researchers at the University of Alabama at Birmingham published a peer-reviewed study showing that modified pig kidneys performed complex life-sustaining functions in a brain-dead patient for a full week.

In an apparent response, surgeons at NYU Langone Health announced that a kidney from a genetically modified pig continued to function well after 32 days in a brain-dead patient maintained on a ventilator, the longest period for such an experiment.

The kidneys used at U.A.B. came from pigs that had undergone 10 gene modifications, while the kidneys used at N.Y.U. Langone Health had only one genetic modification. The latter procedure also calls for embedding the pig’s thymus gland, which is responsible for educating the immune system, underneath the outer layer of the new kidney to prevent an immune-system attack.

So far, transplants of genetically modified pig kidneys have been made only to brain-dead patients. Dr. [Jayme] Locke [at the University of Alabama Birmingham) and her colleagues are in discussions with the Food and Drug Administration about launching a first clinical trial in live patients.

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