In the article “62-year-old receives gene-edited pig kidney in milestone transplant surgery” in the Washington post, author Mark Johnson writes about a groundbreaking procedure where a gene-edited pig kidney was successfully transplanted into a human patient. Since the first successful human kidney transplant, performed in 1954 at Boston’s Brigham and Women’s Hospital, the world has relied on transplants for diseases that affect the liver. With about 17 American’s losing their life each day waiting for the lifesaving organ, there has been a surge in efforts to combat this almost insurmountable obstacle for people’s health. Most recently there has been a successful procedure where a pig’s kidney that has been genetically edited was transplanted into a human patient. According to the doctors at Massachusetts General Hospital, the ones who performed the procedure, the patient is recovering well, and they are planning to discharge him soon so he may finish recovering at home. The success of this procedure shows a lot of potential for medical research and the many patients still waiting on donor lists. Before this it was common to see cow and pig valves used in heart surgery, but full organ transplant had been incredibly risky with a high chance of rejection.

According to the article “Humanized Organs in Gene-Edited Animals” written by Mary and Daniel Garry in the Future Medicine Journal it is possible for animal organs to be genetically modified to be accepted in human patients. However, it does raise many serious ethical concerns because the animals that would be used to grow the transplant organs would be considered humanized models. The term humanized models means that the animals would be injected with stem cells to alter their genetic coding, allowing them to grow human sized organs. The main ethical issues are possible human like thought, the need to have all humanized models sterilized, and potential percentages of human contribution to genetic coding. Despite the ethical concerns raised, the process of having animals grow transplant ready organs for human patients through gene-editing is possible and has an amazing potential for the medical field.

While animal body parts such as heart valves from cows and pigs, the use of a full organ, the kidney, from an animal can generate many more opportunities for patients undergoing dialysis treatments. Currently there are thousands of Americans depending on dialysis to prolong their kidney function while they wait for a transplant. However, the doctors at Massachusetts General have expressed optimism for the process of gene editing pig kidneys to relieve some of the pressure on the organ donor wait lists. Described as a “mini-Manhattan project the long process of making 69 edits to the pig’s genetic code and receiving approval, including FDA approval under “compassionate use”, was a success and the patient’s life was saved.

In conclusion, the article “62-year-old receives gene-edited pig kidney in milestone transplant surgery” from the Washinton Post is accurate but incomplete. The article discusses the potential uses for humanity and people suffering from diseases that lead to them needing organ transplants. The process of engineering gene-edited organs for human transplantation shows amazing potential for patients and medical research, providing a lifesaving option for many people currently on donor wait lists. Unfortunately, this exciting procedure is still very new and ethical concerns are rightly being raised to ensure safe and humane treatment of the humanized models. Despite this, the possibilities created by this research and successful procedure point to a brighter and more prosperous future for medical science using gene-edited pig organs for human transplant.

Citations

Garry, M. Garry, D. Humanized organs in gene-edited animals. Journal of Future Medicine, Regenerative Medicine; https://doi.org/10.2217/rme-2016-0096 (2016).

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