Regeneration of Mammalian Body Parts

A patented gel extracted from immunological immature chickens has been shown to regrow limbs of pets as well as successfully treat burns and bedsores.

Miracle mice

When, in 1994, Dr Ellen Heber-Katz of the Wistar Institute in Philadelphia was monitoring marked mice in a group that she used as experimental animals in connection with her research on multiple sclerosis, she received a surprise. The marked mice could not be found! They had punch holes in the ears for identification, and at first it seemed as though a mistake had been made, for now all of the mice had ears without any holes in them. The experiment was repeated and it became clear that the holes were repairing themselves in about three weeks and leaving no scars. Initially, a number of immature cells formed along the edges of the hole to give a regeneration-blastema which rapidly subdivided so that the hole gradually closed up. There was perfect re-formation of cartilage, blood vessels, and skin.

In contrast to water lizards, for example, mammals have been considered to have very little ability to reconstruct parts of the body. The severed tail or leg of a newt can regrow completely. The cells just beneath the cut surface form undifferentiated mesenchyme cells – a blastema which the grows further and forms precisely the differentiated cells that are distal from the cut.

With humans, it is known that the final joint of the fourth finger in a small child can regrow. This was discovered following an accidental failure to cover a cut surface with skin, which would have otherwise prevented the regrowth.

Luckily, Dr Heber-Katz's mice were unaware that what they had done was impossible according to established medical doctrine.

What was special about these mice? Well, part of their immune defence was missing: the alpha-beta T-cells. These so called MRL mice had been bred for studies of auto-immune diseases such as lupus.

Further experiments carried out by Dr Heber-Katz and her group have shown that these mice can also regrow bone, muscles and the central nervous system. For example, a docked mouse regrew its tail, a severed visual nerve repaired itself, and mobility returned after about one month following partial removal of spinal marrow. In addition, the hearts of the MRL mice have the ability to recover after extensive damage.

In the area of stem cell research, methods are currently intensively developed for the repair of tissues and organs in the human body. Stem cells have the ability to develop into types of specialised (differentiated) cells. Pluripotent stem cells can produce most types of cells, while multipotent stem cells can give only a limited number of different cell types. It is known that adults have stem cells in the skin, the liver, the brain, bone marrow and elsewhere, but they are present in only small amounts and are difficult to isolate. What is needed s a method to deprogram differentiated cells so that they become preferably pluripotent stem cells or at least multipotent stem cells, which then could be made to differentiate to the desired type of cell.

It is possible, however, that the problem of how to make human arms and legs regenerate themselves is nearly solved. The readers can learn about this in what follows.

Problem solved ?

In 1964 the veterinary Dr Harry Robertson happened to burn his hand, and sought relief by quickly immersing it in a gel which was nearby. After 10 minutes the pain had disappeared, there were no blisters, and in due course the hand healed without any scars. The gel was a fresh extract of chicken bones, used as a cheap source of protein. After testing its healing properties on animals and humans, Dr Robertson began to marker it under the name Revital.

Dr Robertson claims that Revital is antibacterial and antiviral, can regenerate nerves and muscles, can heal third-degree burns without scar formation so that transplantation is unnecessary, and can eliminate acne scars and heal difficult bed sores.

Healing seriously injured pets
In one example, injuries in cats leading to the loss of 2.5 cm broad pieces of muscle were packed with Revital three times per day for a period of three weeks, leading to complete re-growth of the muscle.

A dog had been dragged beneath a car, losing most of its thigh muscle and leaving a large part of the thigh bone and hip joint exposed. As an alternative to having the dog put down, Dr Robertson applied Revital and bandaged the injury, whereupon the dog appeared to feel little or no pain within an hour. When the injury was rebandaged several days later, it was found to be completely clean and healing well, although it smelled strongly. The dog recovered completely and new hair grew.

Dr Robertson had been taught that when muscles and nerves are destroyed, they cannot regenerate themselves; but in numerous cases he found that regeneration did occur when Revital was used. On one occasion, a poodle had chewed off its foot and had the stump packed with Revital, which led to the growth of a new foot! Another dog suffered 40 per cent burns to its body and healed completely with Revital.

Dr Robertson documented his claims by taking a series of photographs throughout the healing process.

Revital patent and registration
Several persons have testified to the successful treatment of their burns, cuts, abrasion, herpes simplex blisters and bedsores with Revital.

The production of Revital is straightforward and is done by extracting ground-up chicken legs with vinegar. The whole procedure is described in U.S. Patent No. 4,455,302 of June 1984. One kilogram of chicken legs gives 50 grams of Revital. In 1977, Dr Robertson began to sell products which he had made himself. He applied to the US Food and Drug Administration (FDA) for permission to market Revital as a "Class I Device" (baby powder also belongs to this group) and this was allowed without prescription since it contained no physically damaging substances. The sales of Revital in the local pharmacy rose to $39,000 per month from word-of-mouth advertising, and in addition there were postal sales.

In June 1981 issue of Science Digest published a four- page article about Dr Robertson. In the same year, the FDA asked Dr Robertson to register Revital as a drug- a process which could take up to 10 years and cost millions of dollars, but with the aid of lawyers he was able to retain the "Class I Device" designation.

Subsequently, the FDA reported that Revital contained high levels of bacteria and did not comply with its requirements. Dr Robertson was therefore forbidden to market his products.

FDA stops Dr Robertson and Revital
The FDA was required by the Freedom of Information Act to produce the results of their sterility tests on the three random samples they had examined, but were unable to provide any evidence of contamination. At Dr Robertson's request, several random samples of Revital were sent to four different independent laboratories, and all reported that the product satisfied sterility requirements of the United States Pharmacopoeia (UPS).

(Note: Preparations of Revital have a typical pH of ca.4.6, which, to say the least, is not ideal for the growth of bacteria!)

However, the FDA was determined to prevent the sale of Revital. Dr Robertson was now nearly 80 years old and too disheartened to try to market Revital in another country. Thus did the FDA succeed in killing off this miracle remedy.

Relationship between the experiments
What is the connection between Dr. Robertson's Revital discovery and Dr Heber-Katz's experiments on mice? The answer is that the mice had an incomplete immune defence system. In order to achieve regeneration, the chicken leg extract must be from immunologically immature chickens, i.e., less than nine weeks old. How does chicken leg extract from immunologically immature chickens differ from that from immunologically mature chickens? Nobody knows, but it should be possible to find out. It is possible that a tissue extract from immunologically immature animals has the ability to transform human skin cells (which are easy to grow) to stem cells, solving the problem of how to produce large amounts of stem cells.

References:

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The information of Dr Harry Robertson is taken from the article “Curative Protein of Chicken Feet”, pp 185-187, in the compendium “Creative Alternatives for a Troubled World” copyright 1993 Melvin D. Sounders. Pyramid Research Center, Box 478, Odenton,
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The transcript of Harry J. Robertson’s US Patent No. 4,455,302, “Medical protein hydrolysate, process of making the same and processes of utilising the protein hydrolysate to aid in healing traumatised areas” can be found at http://www.uspto.gov/