

BOOK AND VIDEO REVIEWS

Perspectives on Xenotransplantation

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The term xenotransplantation may be new to many, but the term is likely to become much more familiar in the future. Xeno is derived from the Greek word for 'foreign', and so xenotransplantation denotes the transplantation of organs from one species to another. Some will find the thought of such operations repugnant and reminiscent of the works of Frankenstein, but research into xenotransplantation is driven by the very real shortage of human organs available for those who have suffered critical organ failure.

To date xenotransplantation has not been notably successful, as the longest that any human recipient has lived subsequent to this operation was just under nine months (the donor was a chimpanzee and the organs were kidneys). Moreover the xenogenic tissue triggers the recipient's humoral and cellular rejection mechanisms, and to prevent or delay this it is necessary to use large doses of immunosuppressants which in turn increases the recipient's susceptibility to other diseases. However, there has recently been encouraging progress in animal models and it is at least conceivable that xenotransplants might be used as a bridging technique until a human organ becomes available. It is also possible that transgenics might be used to create a donor animal whose tissue does not trigger the human recipient's rejection mechanisms.

It is therefore timely that the first issue of the ILAR journal (formerly ILAR News) is largely devoted to the topic of 'Xenotransplantation'. Seven authors consider different aspects on the subject ranging from ethical issues to the nature of rejection. Issues raised include whether it is right to use animals for this purpose, and if this premise is accepted, whether closely related primates such as the chimpanzee or baboon should be used as donors or more distant mammals such as the pig. Unfortunately if the pig is chosen for ethical reasons, the problems of rejection are greater. None of the authors discuss the welfare issues, probably because they are seen as being similar to those experienced in other areas of medical research. From the pig's point of view, it may be treated better if its ultimate fate is as an organ donor than if it is a pork roast. Fortunately for the chimpanzee, its endangered status seems to preclude it from being a general source of organs. The baboon, however, is a distinct possibility, and as it is often housed singly in laboratories, there would be obvious welfare issues that would have to be addressed.

Other questions discussed in the journal include when is it right to transfer experimentation from the laboratory to clinical trials, and the very real danger of introducing new diseases to man. Jonathan Allan in his paper makes the excellent point that not only is there the risk of infecting the recipient with a normal pathogen, but all species probably carry dormant virus DNA within their genomes. Because of the long period of coexistence, this DNA does not normally express itself as a virus particle. It is at least possible that the insertion of tissue containing such DNA in an immunologically suppressed recipient might allow the virus to become active in a new host. It would probably be impossible to screen donor species for unknown fragments of potential virus, so this will remain a formidable hazard for the conceivable future. Topics that are not considered in any detail are the social costs and implications of introducing xenotransplantation. Charles McCarthy writes that in the United States as many as 15,000 patients per year could benefit from heart

transplantation alone. Costs would depend on whether it is necessary to keep animals in a gnotobiotic environment or even as purpose-bred transgenic animals created for a specific recipient. Whatever the exact cost, xenotransplantation would produce yet another burden on private health policies, and would remain inaccessible for the poor. In the UK, it is highly unlikely that our over stretched National Health System would be able to cover the additional costs and so, if xenotransplantation does become an accepted technique, it will inevitably create new ethical dilemmas over the allocation of scarce resources. In the mid 19th century the average lifespan was 42 years while today in the UK it is 72 for men and 78 for women. Perhaps in the end society in its decision on healthcare coverage has to weigh up the financial, ethical and social costs, together with the biological risks of the individual's desire for life. Whatever decisions are made some sections of our society will deem them wrong.

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Touching Horses: Communication, Health and Healing Through Shiatsu

Marion Kaselle and Pamela Hannay (1995). J A Allen: London. 192pp. Hardback. Obtainable from the publishers, 1 Lower Grosvenor Place, London SW1W 0EL, UK (ISBN 0 85131 579 8). Price £19.95.

In the introduction, there is a quick resume of the effects of the dogma of Cartesian science on medicine 'to treat the symptoms of the disease rather than focusing on the patient as a unified, indivisible whole governed by an energetic life force' (p xviii). This has a ring of truth to it, and wets one's appetite to find out more about what Shiatsu must be. Although there is a smattering of statements that tend to put one's teeth on edge slightly 'A yearling raised from birth with Shiatsu, recognized something in my greeting touch and immediately pressed specific points of her body – apparently sore from a day of intense play – into my hand', there is also some good sense 'Shiatsu does not replace your veterinarian. It cannot replace your veterinarian's specialised knowledge, experience and skills, but should be an eminent partner in healing and health maintenance.' All the healing modalities can be useful at various times, it is maintained, the important thing is to know when each should be used to maximize the horse's welfare.

Section 1 then continues to describe what Shiatsu is, it involves the movement of energy through the body, and by pressing various pressure points, how this can best be achieved. Statements such as the horses do this to each other with their lips and mutual grooming should, I suggest, be taken with a grain of salt – similar statements could be made to the effect that intimate human interactions are geared to touch particular pressure points to relieve, for example, stiff shoulders or back. Usually they have other more obvious functional pressure points! That the skin is the largest producer of hormones and immune cells in the body I did not know, but in this context I wonder about that too. However, that being said, there are numerous accounts of how horses have been helped and healed using shiatsu and the book gives a detailed account of how much of this can be done involving the Yin Yang energy balances, the integration of body-mind-spirit, and Tsubos or acupuncture points.