

peptides of α -elastin carries the antigenic determinant. The absorption of these antibodies from the circulating blood to the elastic fibres in the vessel wall or elsewhere has also to be considered. We believe that desmosine and isodesmosine, the particular amino-acids involved in the cross-linking of elastin⁷, may play an important part as antigenic determinants^{1,3}. If this is so, wide cross-reaction between elastins of different species (carrying these same amino-acids) could be expected.

It seems probable that the anti-elastin antibodies occurring in human sera can be considered as auto-antibodies. It can be hypothesized that cathepsin-like enzymes slowly degrade elastin⁸ and release soluble peptides into the circulation. These peptides would elicit the antibody response. As elastin is an insoluble structural protein, its soluble derivatives might not be recognized as 'self' by the competent cells. These antibodies would have a tendency to react with elastic fibres, mainly at places where the degradative process renders them more accessible. An antigen-antibody complex could be formed by such a mechanism in the vessel wall. Such complexes may very well play a part in the formation or spreading of a local tissue lesion. One example of such a reaction is, for example, the immune nephritis^{9,10}.

According to our hypothesis, the degradation of elastic tissue followed by antibody formation against the degradation products may be important in the pathological alteration of the vessel wall and especially in atheromatous plaque formation. This would explain the presence of anti-elastin antibodies in most of the human sera that were examined, as well as the absence of higher titres in the sera of severely atheromatous patients. In the latter, according to the hypothesis, the elimination of antibodies by adsorption to the eroded elastic structures would be more intensive than in normal individuals.

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Influencing the Survival of Skin Homografts by a Lymphatic Fistula

THE lymphatic system plays an important part in a number of processes evoked by homografts. By an extirpation of the regional lymph nodes it is possible to prolong the survival of a skin graft¹⁻³. A similar effect can be obtained by injuring the nodes by radioactive radiation or nitrogen mustard^{2,4}.

The influence of the extirpation of nodes is of relatively short duration because further nodes are then linked with the lymphatics and take over the task of regional nodes^{5,6}. We therefore tried to develop a lymphatic fistula in the regional lymphatic node and to evoke an interruption of the lymph system lasting for a longer period.

Table 1. INFLUENCE OF LYMPHATIC FISTULA ON SURVIVAL OF SKIN HOMOGRAFTS

Skin graft only (days)	Drainage (days)	Air-pump drainage (days)	Air-pump drainage and irrigation (days)
14	13	17	27
16	15	52	19
12	23	23	34
15	13	23	51
10	12	20	35
12	51	70	13
	16	18	23
	23	23	19
	23	49	
		12	
Mean 13.1	21.0	30.7	28.2

Chinchilla rabbits weighing 2,500–3,000 g were used. Full-thickness skin grafts were transplanted from black donors to the ear of the Chinchilla recipients which were of different colour. Fistulae were developed in such a way that half the regional lymphatic node was extirpated after ligation of the blood supply and with a patent afferent lymphatic vessel; a drain of an inner diameter of 7 mm was sutured to the area which was thus created.

The first group consisted of control animals without drainage of the lymph system. In the second group we left only animals with drainage. In the third group we connected the drainage to an air-pump of a constant pressure of -0.2 kp/cm². In the fourth group we irrigated the injured surface of the node with a physiological solution containing heparin. After seven days the fistula was removed.

During the experiments all rabbits were kept in a special harness and injections of 'Heparin Retard Spofa' in doses of 4,000 units were administered subcutaneously twice daily.

Table 1 shows the results of the experiments. In the control group skin homografts on the ear of the rabbit survived an average of 13.1 days (10–16 days) until complete necrosis. In the second group the survival was 21.0 days on average (13–51 days). In the third and fourth groups the survival was practically the same, averaging 30.7 days (12–70 days) without irrigation and 28.2 days (18–51 days) with irrigation.

The results show that a long-term fistula with the possibility of lymph flow considerably prolongs the survival of grafts as compared with a control group as well as with a group without suction. We can therefore assume that in these two series the integrity of the lymph system is renewed much later as compared with experiments where only extirpation of the lymph nodes was performed.

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Chromosome Marker Studies in the Graft-versus-Host Reaction in the Chick Embryo

THE production of splenomegaly and other lesions by the injection of adult avian blood into the chick embryo is due to an immunological reaction between donor blood cells and host embryo tissues^{1,2}. Biggs and Payne³ have shown that the reaction is accompanied by proliferation of donor cells within the host spleen. They were able to distinguish donor (male) cells from host (female) cells by