may be attributed to an increased synthesis induced in the first stage by the localized inflammation and in the second stage by the generalized inflammatory polyarthritis. They were not due to any hemoconcentration, since the total proteins were not significantly modified; in fact, these glycoproteins represented at the most 5 to 10% of the total proteins. Our results are in agreement with those of GLENN et al.[16] who reported an increase of α_1 and α_2 globulins, total mucoproteins and glycoproteins. But these authors did not mention the first inflammatory peak since they began their study at day 4.

No significant pathological proteinuria was observed during the course of the adjuvant arthritis, in comparison with the control groups of rats which excreted 2.3 mg proteins per day as a mean. No morphological lesions of glomeruli, tubuli, mesangium, interstitial space and vessels were noted by microscopic examination in the kidney. The contrary had been expected, since ZAHIRI et al.[17] observed histological alterations of kidney glomeruli and tubuli. However, they used a different adjuvant.

Conclusion. The kinetics of orosomucoid, Hp and seromucoid in serum during adjuvant arthritis reflect the two phases of the clinical development. Therefore, we suggest the use of these quantitative biochemical parameters to appreciate the effect of drugs or other experimental factors in this immunopathological disease. Further experiments to validate these tests are in progress.

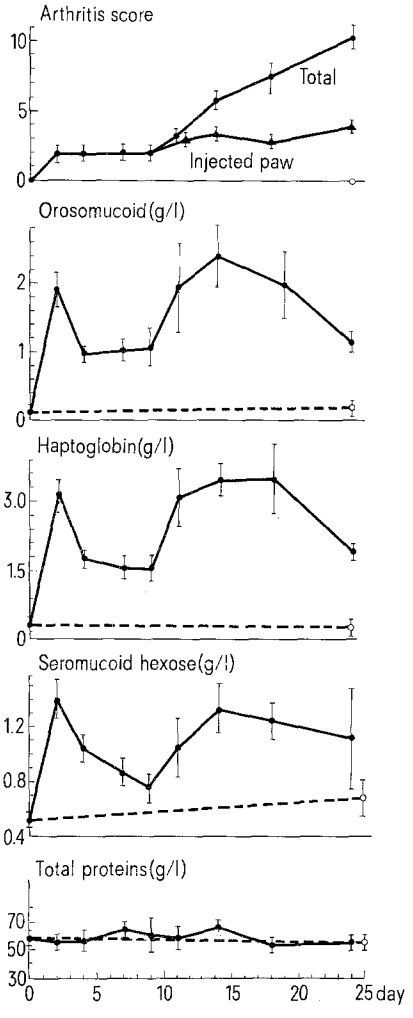

Fig. 2. Arthritis total (●—●) and partial score, limited to the injection paw (▲—▲), compared with serum orosomucoid, Hp, serum seromucoid and total proteins during adjuvant polyarthritis in the rat. ●, mean of the experimental group ± standard error of the mean; $\overset{T}{\bullet}$, mean of 24th day control group). Normal control values for 10 rats: arthritis score = 0; orosomucoid = 0.13 ± 0.03 g/l; haptoglobin = 0.27 ± 0.01 g/l; seromucoid hexose = 0.60 ± 0.06 g/l; total serum proteins = 59 ± 2.7 g/l.

Résumé. Chez le rat, au cours de la polyarthrite par adjuvant, les courbes évolutives de l'orosomucoïde et de l'haptoglobine sérique présentent 2 pics importants parallèles à ceux du séromucoïde et correspondant aux 2 phases inflammatoires de la maladie. Nous n'avons observé ni protéinurie pathologique, ni lésions histologiques rénales.

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Venular Micro-Aneurysmal Ectasia: an Accompaniment of the Cutaneous Allograft Response

Increased vascular permeability to circulating Evans' blue is a prominent and early event in the cutaneous allograft response which immediately precedes unequivocal macroscopic and microscopic evidence of the onset of rejection[1]. In the course of our studies on the vascular changes occurring at the time of this exudative response, we have noticed the development in the graft vessels of diffuse venular ectasia and in particular focal aneurysmal dilatation closely related in time to the exudative response.

Orthotopic full-thickness skin grafting was carried out using inbred strains of Wistar Albino Glaxo and Piebald Variant Glaxo rats as donors and recipients respectively. Orthotopic skin was grafted into round excised wounds (9.00 ± 0.5 mm) on the flanks of recipient animals im-

mediately cephalad to the anterior fold of the hind limb. The graft and its bed were protected from external irritation by attaching 'Perspex' wound-healing chambers[2] to the skin immediately surrounding the grafted area; the grafts were held firmly in position and prevented from drying by packing 'Sofratulle' dressing over the graft before the chambers were closed.

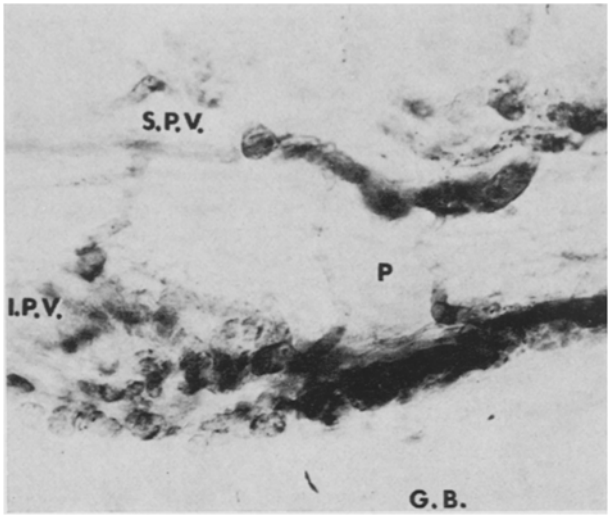
Increased vascular permeability was assessed by injecting colloidal carbon (Gunther Wagner Pelikan Werke, Hanover, Germany: batch C11/1431a) i.v. in a dose of 0.1 ml/100 g body-weight at various times after grafting; 30–60 min later when free circulating carbon had been cleared by the reticuloendothelial system, animals were anaesthetised and killed by exsanguination. The graft and a generous area of host tissue was excised, fixed in buffered 10% formalin and cleared by a modification of the Spalteholz technique[2]. The cleared tissues were examined by means of a Zeiss stereo-dissecting microscope.

Increased vascular permeability is characterized by the deposition of carbon within the walls of vessels exhibiting abnormal permeability[3]. Within 6 h of grafting, the initial traumatic inflammatory response in the host tissues subsides and is followed by a fine punctate carbon labelling of newly formed capillaries at the hostgraft junction. Circulating carbon does not enter the vessels of the allograft in the initial 2 days after grafting, but on days 3 and 4 small intraluminal clumps of carbon are seen in the vessels of the graft indicating a re-establishment of a sluggish allograft circulation. On the 5th and 6th days, venules in the surrounding host tissues and in the graft become heavily demarcated with carbon; the former vessels exhibiting diffuse punctate labelling consistent with increased permeability, whereas the graft vessels show a combination of dense intraluminal sludging of columns of carbon as well as deposition of carbon on and within the endothelium.

At the time of maximum accumulation of carbon within the graft vessels, i.e. on day 6, small and large venules are seen within the graft to be abnormally and generally uniformly dilated (Figure) and venules of the order of 13–40 μm diameter exhibit vesicular dilations reminiscent of micro-aneurysms. Such aneurysmal dilatations are most prominent along the course of venules lying deep to the panniculus carnosus (Figure), i.e. close to the host-graft junction whereas uniform venular ectasia and fewer aneurysms are seen in the suprapannicular vessels. Although fine intraluminal and intramural carbon labelling is seen in both the diffusely ectatic venules and the focal dilatations, grafts with dense columns of sludged carbon within vessels rarely exhibited significant numbers of focal micro-aneurysms.

Vascular dilatation with compaction stasis of erythrocytes has previously been described for both skin[4] and renal[5] allografts; such changes together with the focal aneurysmal dilatations described herein might well be related to the heightened sensitivity exhibited by allograft vessels to humoral vasodilator factors[5] at the time of onset of rejection.

It is concluded that the formation of focal venular microaneurysmal and diffuse venular ectasia is a component of the early inflammatory response heralding the onset of allograft rejection.



Section through an allograft avulsed from the graft bed (GB). Microvenular aneurysms are seen predominantly in the inferior pannicular venules (IPV). The superior pannicular venules (SPV) and the connecting vessels traversing the panniculus carnosus (P) show uniform dilatation and few aneurysmal dilatations (×25).

Résumé. La réaction cutanée de l'immunite de transplantation contre une greffe allogénique est accompagnée d'une forte mais courte augmentation de la perméabilité vasculaire. La réponse vasculaire apparaît rapidement dans le tissue vecteur et est accompagnée d'une dilatation diffuse de la veine et d'un dévelopement des anévrismes milliaires des vénules dans le tissu de la greffe allogénique.

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Estrogen Target Cells in the Skin

Effects of estrogens on various components of the skin have been known for some time. However, the mediation of these effects remains unclear. Despite extensive use in therapy, birth control and cosmetics, the cellular and subcellular sites and the mechanisms of action of estrogens in skin are little understood[1,2].

In the epidermis, estrogens increase the mitotic rate in rodents and man[3], but reduce the size of the sebaceous glands[4]. Also, the secretion of sebum, which is stimulated by androgen, can be diminished by estrogens[5]. Hair growth, in general, is retarded after estrogen treatment in animals that have been gonadectomized, adrenalecto-