A method for measuring changes in blood flow during healing and rejection of rabbit skin grafts

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Few methods are available for direct measurement of blood flow during the inflammatory response evoked by transplantation of skin grafts. Methods involving radioisotopes (Baker & O'Brien, 1964) may become complicated in inflammation (Ascheim, 1965) since both blood flow and vascular permeability increase simultaneously. Therefore, a new method is proposed. It involves measuring the rate at which blood escapes from the vessels of the connective tissue underlying the transplanted skin, i.e. the graft bed.

transferred aseptically to sterile Petri dishes and weighed using an Oertling R 20 balance, reproducibility (S.D. 0.03 mg). At set intervals after dissection, these swabs were placed on the graft bed, pressed lightly to absorb the accumulated blood and removed immediately. The Petri dishes were reweighed. The same procedure was repeated on removal of each graft postoperatively. The weight of blood collected during a set interval was converted to $\mu l/s$ with a volume/weight calibration curve prepared using fresh blood from an ear artery. Figure 1 shows the average rate of blood loss during each period.

Although before transplantation the blood flow (a) at homologous sites is similar, on the 6th postoperative day it is almost nine-fold greater at sites bearing homografts than at those with autografts. The question arises whether the disparity is related to the immunological response
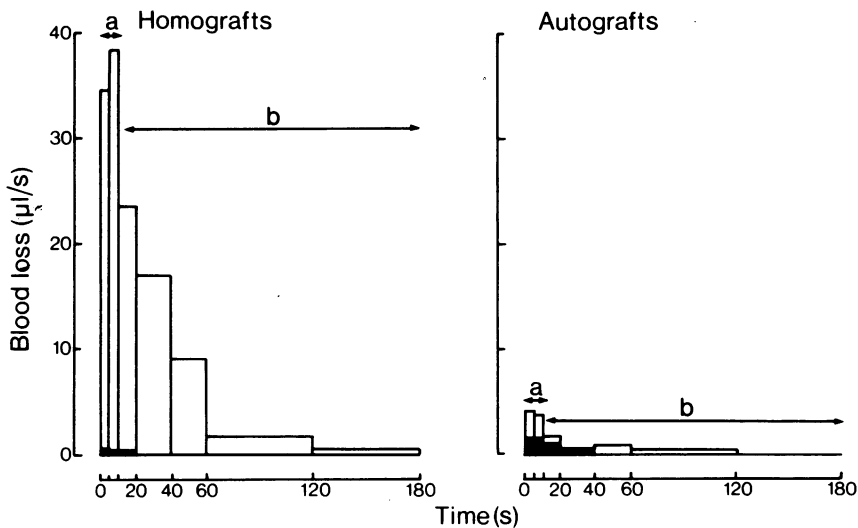

Fig. 1 . Pattern of blood loss at identical anatomical sites bearing two different types of grafts on the opposite legs of a Norfolk rabbit: before transplantation ■, and after removal of the graft postoperatively □. Histograms represent the rate of blood loss at different intervals of time: (a) represents blood flow, and (b) the influence of vasoconstriction and clotting.

Full-thickness skin grafts were made as described previously (Jasani & Lewis, 1971), 3-6 homografts on one hind limb and an equal number of autografts at homologous sites on the opposite leg. Blood flow was measured in recipient animals immediately after dissection of the skin to obtain the initial values. Sterile swabs, 2.5 cm^2, were

since interaction of lymphocytes with antigen induces release of vasoactive principles (Schild & Willoughby, 1967; Dumonde, Wolstencroft, Panayi, Matthew, Morley & Howson, 1969).

The decrease in flow during interval (b) may indicate the onset of vasoconstriction and clotting in response to vessel injury.

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A method for studying drug metabolism in the canine intestine (T)

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Computer analysis of multiple choice examinations

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Multiple Choice Question-type examinations are being increasingly used in clinical and preclinical subjects. Such examinations are ideally suited to automated marking by computer (normally scoring +1, 0, −1 for right, omit, and wrong respectively) and many programs exist which give final percentages and much useful statistical data. However the fundamental difference between omission (when the candidate knows he cannot answer) and error (when the candidate does not know he is wrong) has largely been ignored.

This demonstration presents a modified computer marking program which gives punch card data of percentage correct, percentage wrong, percentage omitted and final marks, and shows how these can be further analysed to provide information both on teaching efficiency and on individual student performance.