vicinity of nerve cells. Nerve cells were abundant in the meshes of the pelvic plexus, but were also present, though scarce, within the hypogastric nerve proper, and were usually arranged like a string of beads in the core of the nerve. They were found in larger clumps at the origin of the hypogastric nerves near the lower pole of the inferior mesenteric ganglion.

So far as can be judged from this small material there was no difference in the amount of chromaffine tissue in the nerves of young and of adult dogs. Similarly, Kohn[3] found that chromaffine tissue does not degenerate in adult cats and rabbits.

In view of the present interest of pharmacologists in the hypogastric nerve–vas deferens preparation of the guinea pig devised by Huković[4], the fact should be kept in mind that this 'nerve' is a complex structure and varying in composition from species to species, and not just a bundle of postganglionic fibres.

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PATHOLOGY

Ineffectiveness of Autotransplantation on Growth of the Methylcholanthrene Sarcoma in Rats and Mice

RECENTLY, Ishibashi *et al.*[1] reported that the subcutaneous autotransplantation of a patient's own tumour slices was effective against the growth of the original tumour and sometimes caused its regression. It seems, however, that experimental evidence on the effectiveness of autotransplantation is not sufficient to try it against human cancer. Attempts were made in this laboratory to examine whether autograft of tumour induced by methylcholanthrene could increase the survival days of the host after appearance of a tumour.

The animals consisted of 100 virgin female Wistar strain rats weighing about 105 g and of 100 mice of *A*1 strain[2] of both sexes, 15–20 g in weight. They were injected subcutaneously in the interscapular region with 3 mg in rats and 1 mg in mice of 20-methylcholanthrene (California Corp. Biochem. Res., Los Angeles) in olive oil, and were fed a synthetic cube diet (Central Laboratory for Experimental Animals, Tokyo) and given tap water *ad libitum*.

Subcutaneous autotransplantation. Seventy rats in which tumours (fibrosarcoma) developed in 100–130 days after methylcholanthrene injection were subjected in this experiment. When the tumour attained a diameter of 20–25 mm, two-thirds of it was excised from 40 animals. Twenty (group 1) of them were transplanted surgically with their own tumour (2 slices, 3 × 3 × 3 mm) into the subcutaneous tissues of the dorsal surfaces apart from the indigenous tumour. Twenty other rats (group 2) were subjected to an identical procedure as the animals of group 1, without tumour implantation. Thirty animals as control (group 3) were maintained freely without surgical excision or implantation of the tumour. After surgical operation, maximum diameter and its right-angled one in all tumours were recorded at least once a week.

Growth rates of tumours in rats of each group are presented in Fig. 1*a*. The growth curve of group 1 has

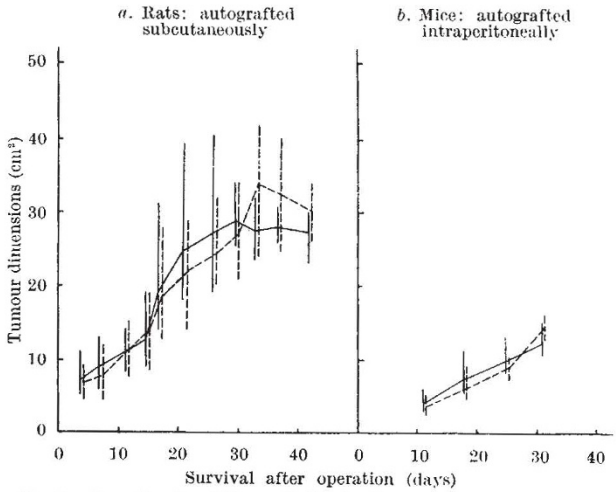

Fig. 1. Growth rate of the methylcholanthrene sarcoma in the autografted (——) or the non-autografted (- - - -) rats (*a*) and mice (*b*). The length of the longitudinal lines denotes the range of tumour sizes

almost the same as that of group 2. Average survival after tumour occurrence was 50·6 ± 10·1 in group 1, 46·9 ± 7·0 in group 2 and 47·0 ± 13·1 days in group 3, respectively. Statistical analysis revealed that there were no significant differences in survival days among three groups.

Intraperitoneal autotransplantation. When the tumour reached a size of 12–15 mm in diameter, mice were autotransplanted with tumour (2 slices, 2 × 2 × 2 mm) into the peritoneal cavity by 13-gauge trocar. Sixty mice in which tumour developed (fibrosarcoma) 70–100 days after injection of the carcinogen were subjected to the following experiment. In 20 mice, two-thirds of the tumour was excised and the tumour was inoculated intraperitoneally (group 4). The tumour in 20 other animals was excised similarly with group 4 and the abdominal wall was inserted by the trocar without tumour transplantation (group 5). The remaining 20 mice were maintained freely without any operation (group 6).

Growth rates of the tumours of each group are presented in Fig. 1*b*. The curve of group 4 has almost the same configuration as that of group 5. Average survival days after tumour occurrence was 39·3 ± 3·3 in group 4, 38·2 ± 5·5 in group 5, and 35·8 ± 5·4 in group 6, respectively, and differences among three groups were of no significance.

The results of the present experiments showed no convincing effect of the immunological treatment on malignancies, although the negative results might mean that the materials or the techniques were inadequate. After preparation of this paper, we read Rhodes's experiment[3] in which the tumour (the spontaneous tumour of the *c*+ strain) was autografted subcutaneously with Freund's adjuvant and tetanus toxoid into autochthonous mice. He found also no significant difference in the life-span between autografted and non-autografted animals.

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