

A Transplantable Leiomyosarcoma (HT-1) of the Hamster*

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Spontaneous or induced hamster tumors which have been maintained by serial transplantations are quite rare (1, 2).¹ However, such tumors have been more and more in use in recent years. The object of this paper is to report a new hamster tumor.

This tumor (HT-1) arose in a male Syrian golden hamster which had been given subcutaneous implants of a cholesterol pellet 8 months before the tumor was observed. The tumor-bearing animal was one among twelve which had been under an experiment performed in our laboratory. The exact site into which the cholesterol pellet was implanted subcutaneously is not known, and it is therefore impossible to establish a correlation between the site of the pellet implant and the site of the tumor.

The original tumor was located on the left flank. A biopsy was made on December 12, 1954. Grossly, the specimen showed solid tumor areas, large areas of necrobiosis, and hemorrhage. Histologically, the tumor consisted of wide bundles of long cell fibers containing a large, centrally located nucleus. Extra- and intercellular edema was observed in many areas. No cross striation could be demonstrated. After extensive histological study the tumor was classified as a leiomyosarcoma (Fig. 1).

This tumor has been carried on in hamsters by the trocar method, the subcutaneous grafts being made bilaterally in the axillary regions. The origi-

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FIG. 1.—Original tumor. H & E, $\times 400$.

FIG. 2.—Subcutaneous tumor transplant, fifth generation. H & E, $\times 400$.

FIG. 3.—Subcutaneous tumor transplant, 40th generation. H & E, $\times 400$.

FIG. 4.—Hamster bearing a bilaterally transplanted tumor.

FIG. 5.—Tumor metastasis in the lungs following a subcutaneous transplant.

nal hamster and all the others used since as hosts have been secured from an animal dealer, the Golden Nugget Hamstery, Maynard, Massachusetts.

New transplants are made every 2 weeks, both female and male hosts being used. The hosts develop large tumors (Fig. 2) and die in 4–6 weeks following transplantation. Tumor metastases have been consistently found in those animals which are allowed to die from the tumor grafts. The most frequently affected organ is the lung (Figs. 3 and 8). In one hamster metastases were found in the peritoneal cavity, liver, kidneys, adrenal, mediastinum, and lungs (Figs. 4–7).

At present, the tumor has undergone 54 serial transplantations; 162 animals have been grafted, and each one of them developed progressively growing tumors.

The histological picture of the HT-1 tumor thus far has not undergone any noticeable change (Figs. 2 and 3).

SUMMARY

A new, transplantable tumor of the Syrian golden hamster has been described. This tumor, a leiomyosarcoma, arose in a male hamster which had been previously implanted subcutaneously with a cholesterol pellet. It grows progressively in 100 per cent of the hosts following subcutaneous implantation. Metastases have been observed in several organs.

REFERENCES

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FIG. 6.—Kidney: tumor metastasis following the first transplant generation. H & E, $\times 400$.

FIG. 7.—Adrenal: tumor metastasis following the first transplant generation. H & E, $\times 400$.

FIG. 8.—Lung: tumor metastasis following the first transplant generation. H & E, $\times 400$.