Mammary Cancer in Rats and Mice

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Mammary cancer is a common cause of tumors in rats and mice and can occur in both males and females. The prevalence of tumors varies with the strain of animal. In some mouse strains, 70% develop mammary tumors. In mice, mammary tumors are also associated with the mouse mammary tumor virus (MMTV), which predisposes a mouse to develop mammary cancer. One strain of this virus is termed the "Bittner agent."

What are the signs of mammary cancer?

Rats: Since mammary tissue in the rat extends from the neck region to the pelvic region, mammary cancer occurs anywhere in that area. The most common form of mammary cancer in rats is a benign fibroadenoma; malignant adenocarcinomas account for less than 10% of mammary tumors. Mammary tumors can become quite large, even up to 3-4 inches.

Mice: Mammary tumors in mice can virtually be found anywhere on the body. Most mammary tumors in mice are malignant adenocarcinomas. These tumors commonly become ulcerated, and often metastasize to the lungs.

How is mammary cancer diagnosed?

Mammary cancer is generally diagnosed by the location of the tumor, and a biopsy is performed to determine the type of tumor, and if it is malignant.

How is mammary cancer treated?

Rats: Mammary tumors are treated by surgical removal. Fibroadenomas may form or recur in multiple areas of the mammary tissue, and repeated surgeries may be needed to remove them. Experimentally, the drug tamoxifen and other anticancer drugs have been used to treat mammary tumors in rats.

Mice: Since most mammary tumors in mice are malignant, the recurrence rate is high and the prognosis is poor.

Can mammary cancer be prevented?

Rats: Spaying female rats can greatly reduce the risk of mammary cancer.

Mice: An offspring of a mouse whose mother had a mammary adenocarcinoma may be at higher risk of developing mammary tumors since the virus can be passed from the mother to her offspring both in utero and through the milk.

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