

Under the skin

By Sandra Bulla

Common skin tumours seen in guinea pigs.

The guinea pig (*Cavia porcellus*), also commonly known as the cavy, is an increasingly popular companion animal. Despite the misleading name, guinea pigs are not from Guinea but originate from the Andes Mountains in South America. They were domesticated by the Andean people of Peru, who used them both as a food source and for ceremonial purposes, including offerings to Incan gods. Guinea pigs were introduced to Europe in the 16th century, where they gained popularity as exotic pets. Over time, selective breeding led to numerous breeds with diverse coat types and colours.

Guinea pigs are relatively large rodents, with adult weights typically ranging from 900–1200g, and average lifespans of five to seven years. These animals are highly social and thrive in groups, making them well suited for domestic settings. Their gentle nature, positive response to handling and ease of care have contributed to their enduring appeal as household pets.

As advancements in pet healthcare and increased owner attentiveness improve longevity, neoplastic diseases are becoming more commonly observed in veterinary practice.



This article provides an overview of the most common skin neoplasms in guinea pigs and presents a summary of cases diagnosed through cytology and histology at Awanui Veterinary from January 2022 to May 2025.

Neoplasia in guinea pigs

Neoplastic diseases are common in guinea pigs, especially in older animals. A multi-institutional necropsy study involving more than 2,000 cases reported a tumour prevalence of 20.5%, with incidence significantly increasing to 53.6% in guinea pigs older than five years (Bertram et al., 2024).

The incidence of neoplasia was also high in another study, investigating biopsy and necropsy samples collected from guinea pigs in a Czech Republic veterinary school. From 204 evaluated tumour-like lesions, 75% were neoplasia. The average age of guinea pigs with tumours was 4.2 years, with most animals falling within the three-to-five-year age range. The sex distribution was skewed, with males accounting for 57.5% (88 cases) and females 42.5% (65 cases) (Nespor et al., 2023).

The most frequent tumours varied within these studies. In the study by Nespor and collaborators, the most common diagnosis was adenocarcinoma of the thyroid gland, constituting 18% of all the neoplasias, whereas Bertram and collaborators found lymphomas or leukaemias as the most common diagnosis (prevalence of 7%). However, skin tumour was a common finding in the investigated animals in both studies. Skin neoplasia comprised 42.5% of all diagnosed tumours (Nespor et al., 2023) and had a prevalence of 3% in the necropsied animals (Bertram et al., 2024).

Skin and subcutaneous tissue

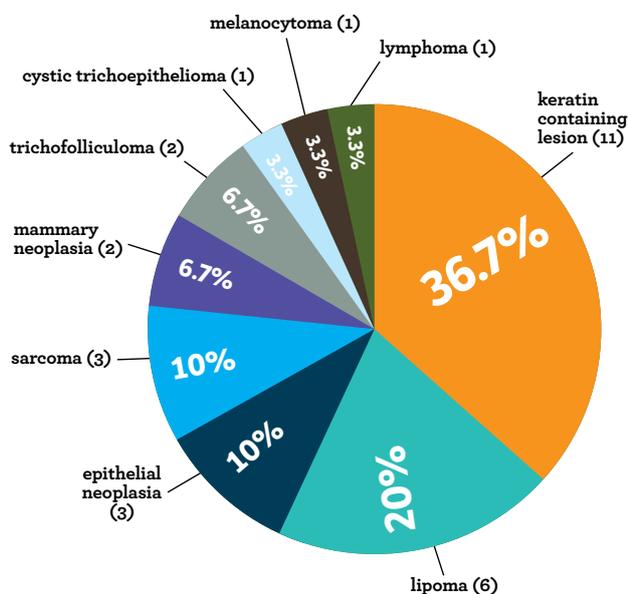
As shown above, tumours in the dermis and subcutaneous tissue are common neoplasias in guinea pigs. Interestingly, they might affect slightly younger animals. A retrospective analysis of 103 biopsy-confirmed skin tumours in guinea pigs from Poland identified a mean age of 3.5 years in affected animals (Otrocka-Domagala et al., 2024).

Lipoma was most frequently reported as the most common skin neoplasia, varying from around 32–45% of the cutaneous and subcutaneous tumours. These were most frequently located in the inguinal region, followed by the trunk, neck, axilla, and head (Bertram et al., 2024; Chen et al., 2024; Otrocka-Domagala et al., 2024).

The studies most frequently reported hair follicle tumours, including trichofolliculoma and trichoepithelioma, as the second most common skin neoplasia. These benign hair follicle tumours comprised around 17–21% of the neoplasia in the skin (Bertram et al., 2024; Otrocka-Domagala et al., 2024).

Other tumours often diagnosed were soft tissue sarcomas, reported as 14–23% of the skin tumours. Specific types were most commonly fibrosarcoma (43% of the soft

FIGURE 1. Skin masses in guinea pigs diagnosed at Awanui Veterinary 2022-2025 (n=30)



tissue sarcomas), followed by liposarcoma (30%), fibroma (10%), haemangioma (6%), and single cases of haemangiosarcoma, perivascular wall tumour, and poorly differentiated sarcoma (Bertram et al., 2024; Otrocka-Domagala et al., 2024).

Mammary tumours

Mammary tumours are relatively common in guinea pigs, being reported with an incidence of around 1% and comprising 11.76% of the tumours diagnosed in necropsy or biopsy (Nespor et al., 2023; Bertram et al., 2024). In another study, mammary gland adenocarcinoma was the second most commonly excised tumour in guinea pigs, only after lipomas (Chen et al., 2024).

Interestingly, mammary tumours are diagnosed more frequently in male guinea pigs, which unfortunately most often develop malignant neoplasia. The malignancy rate of this type of tumour increases with age of the animals. In studies, mean ages at diagnosis varied from around three years for benign mammary tumours, and 4.2–4.7 years for malignant mammary tumours (Nespor et al., 2023; Pazdzior-Czapula et al., 2024; Raymond et al., 2024). Ductal carcinomas were the most common type diagnosed (Pazdzior-Czapula et al., 2024).

Skin masses at Awanui Veterinary

Between January 2022 and May 2025, 64 skin masses from guinea pigs were evaluated at our laboratories through cytology and/or histology. Of these, 43 cases achieved

a tentative or definitive diagnosis, with 13 of those being inflammatory in nature. This left 30 presumed or confirmed neoplastic cases. See Figure 1 for a graphic representation of the distribution of the diagnoses.

As most of our cases were from cytology, a definitive diagnosis was not reached in many of the cases, and the most common diagnosed tumours varied slightly from the studies described above. The most common diagnosis in our dataset was keratin accumulation with or without anucleate squamous cells (36.7%), suggesting cystic follicular neoplasia, such as trichofolliculoma or trichoepithelioma. Although those were commonly reported in the literature, they were often not the most common tumour, which was more frequently lipoma. However, lipomas appeared in second place at Awanui Veterinary, comprising 20% of the diagnosed tumours. One of the explanations for this finding is that many lipomas might be diagnosed presumptively in the clinic, and we don't see them as often in the laboratory.

Other diagnosed tumours were epithelial neoplasia (10%), including one sebaceous gland adenoma, and sarcomas (10%).

Conclusion

While the most diagnosed tumours in guinea pigs might vary among studies, consistent patterns emerge. Lipomas, trichofolliculomas and trichoepitheliomas appear frequently and are generally benign and treatable. Other tumours, like mammary neoplasia, although often malignant, might benefit from early intervention. Given the increasing longevity of pet guinea pigs and their susceptibility to neoplastic disease, early diagnosis and treatment are crucial to enhance their quality of life and positive long-term outcomes. [vs](#)

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