香港獸醫專科服務

HONG KONG VETERINARY SPECIALTY SERVICES

Skin & under-the-skin (cutaneous/subcutaneous) tumours in dogs

How we figure out what a lump is?

Most lumps are first checked with a fine-needle aspirate (FNA) or biopsy, then confirmed by a pathology report that tells you the tumour type and whether it was removed with clean ("complete") margins. Across many tumour types, complete margins sharply reduce the chance of the lump growing back in the same spot—this has been shown repeatedly for soft-tissue sarcomas and other skin tumours.

"Margins" = how much normal tissue is cut around and under the lump. Wider cuts help catch microscopic "fingers" of tumour that the eye can't see.

Common tumour types in dogs (what to expect and how we treat them)

1) Soft-tissue sarcomas (STS)
What they are: A family of connective-tissue tumours (e.g., fibrosarcoma, peripheral nerve sheath tumour, myxosarcoma). They tend to infiltrate locally but spread late/less often. The main battle is local control.
Surgery: When anatomy allows, surgeons typically aim for ~3 cm lateral margins plus one deep fascial plane. Meta-analysis shows that microscopically complete margins cut local-recurrence risk to low levels; incomplete margins raise the risk and often trigger re-excision or post-op radiation.
Radiation/Chemo: If margins are close/dirty and more cutting isn't feasible, radiation meaningfully reduces regrowth (many series report long survivals and local-recurrence ~17–31%, depending on case mix/grade). Chemotherapy is usually reserved for high-grade or metastatic cases.
Take-home: Your surgeon should **get good margins the first time** when possible; add radiation if margins are compromised.

2) Mast cell tumour (MCT) – See separate owner's brief
What it is: A skin tumour from mast cells; behaviour ranges from very tame to aggressive.
Surgery: For typical low/intermediate-grade MCTs, ~2 cm lateral margins plus a deep fascial plane are often enough to achieve clean histologic margins; some centres still use 3 cm in selected cases. If margins are incomplete and a wider re-excision isn't feasible (e.g., distal limb/face), post-op radiation provides excellent local control.

3) Hemangiosarcoma of the skin (dermal) vs under the skin (subcutaneous)
Why it matters: Location changes prognosis.

Dermal (skin-only) HSA: Often linked to sun exposure; when truly confined to the skin and completely removed, long survivals are reported (classic series median ~780 days after surgery).
Subcutaneous/deeper HSA: Behaves more aggressively and is managed like internal HSA (staging + discuss systemic therapy). Reviews consistently note the much poorer outlook for deeper forms compared with dermal

4) Lipoma vs infiltrative lipoma
Ordinary lipoma: Benign fatty lump; surgery is elective (location/size/comfort).

Infiltrative lipoma: Not malignant but grows into muscles/fascia and recurs frequently unless removed widely; many dogs benefit from post-op radiation when complete excision isn't possible. Modern reports cite ~30–50% recurrence with surgery alone.

5) Cutaneous plasmacytoma

Usually benign-acting; complete excision is typically curative. A multi-centre review summarised ~5% local recurrence and ~2% metastasis overall—so additional therapy is rarely needed after clean removal.

6) Squamous cell carcinoma (SCC), especially toe (digital) SCC

Digit SCC: Common and important. Toe amputation is standard and often curative for local disease; aggregated studies show ~50–83% 1-year survival and ~18–62% 2-year survival after amputation (prognosis depends on stage and spread).

Cutaneous (haired-skin) SCC elsewhere: Many are locally curable with timely surgery; deeper/large lesions may need wider excision or adjuvant therapy. Historic digit amputation series report ~76% 1-year and ~43% 2-year survival.

7) Melanocytic skin tumours (cutaneous vs oral/digital melanoma)

Key distinction:

Oral/digital melanomas = typically malignant, need full staging and aggressive local therapy ± systemic options.

Cutaneous (haired-skin) melanocytic tumours are often benign or low-grade and curable by excision; prognosis is much better than oral melanoma when pathology confirms a cutaneous origin. Recent consensus guidelines summarise site-specific behaviour and management.

8) Perianal (hepatoid) gland tumours

Adenomas are common in intact males and are hormone-dependent. Castration + marginal excision is usually curative, with low recurrence (~10–13%) in contemporary cohorts; adenocarcinomas (malignant) need wider planning.

9) Histiocytoma (young dogs) & viral papillomas ("warts")

Histiocytoma: A benign Langerhans-cell tumour that often regresses on its own over weeks to months once diagnosed—surgery only if it's ulcerated, persistent, or in a bad spot. (Standard teaching; regression is the hallmark.)

Papillomas: Virus-related warts, especially in youngsters or immunosuppressed dogs; many resolve spontaneously. (General guidance; your vet will confirm with FNA/biopsy when needed.)

(These two are included for completeness; they're typically simple once confirmed.)

How wide do we cut = Typical surgical margins by tumour

- Soft-tissue sarcoma: Aim for ~3 cm lateral + 1 deep fascial plane when possible; complete margins = much lower regrowth risk.
- Mast cell tumour (low/intermediate grade): ~2 cm lateral + 1 fascial plane commonly sufficient; escalate or use radiation for high-grade/compromised margins.
- Dermal HSA: Wide local excision; prognosis can be excellent when confined to the dermis.
- Infiltrative lipoma: Plan wide resection; consider radiation if margins aren't clear because recurrence is common with surgery alone.
- Plasmacytoma (cutaneous): Complete excision generally curative.

- Digit SCC: Amputation of the affected digit is standard, with good survival when disease is local.

Complications after skin-tumour surgery (what to expect, with typical rates)

Most dogs do very well. Complications cluster into two buckets:

Wound-healing issues (most common)
Minor problems—swelling, seroma (fluid pocket), mild infection, or partial incision opening—are the usual ones. Rates vary by location and closure tension; studies of challenging marginal excisions (tight spots) often report ~20–30% minor wound issues, typically managed with drains, rest, and local care. Wider resections on roomy body sites generally have lower rates.

Tumour-specific risks
MCT: histamine-related swelling/ulceration is controlled with antihistamines ± acid blockers around biopsy/surgery; serious systemic reactions are uncommon with modern protocols.
Big/tight closures (e.g., STS on a distal limb): your surgeon may use skin flaps, grafts, drains, or staged closure to reduce tension and keep risk down (complication risk is driven more by anatomy/tension than tumour type).

Good news: Most complications are minor and temporary and don't change long-term cancer control.

When do we add radiation or medicine?

Radiation therapy: Very useful if margins are close/dirty and further cutting would cause problems (e.g., face or distal limb). For canine STS, surgery + radiation cohorts show durable control with local-recurrence often around ~17–31% depending on grade and case mix.

Systemic therapy:

STS: usually not needed for low-/intermediate-grade tumours after a clean excision; consider for high-grade or metastatic disease.

Subcutaneous/deep HSA: managed like visceral HSA—discuss doxorubicin-based chemotherapy after surgery; dermal HSA may not require chemo if truly skin-confined.

MCT: options include traditional chemotherapy or targeted drugs for high-risk or non-resectable disease (see your MCT sheet for details).

Practical scenarios (how this plays out)- FNA everything to avoid any regret!

1. Firm, slow-growing lump under the skin; FNA = soft-tissue sarcoma
→ Plan: Surgery with ~3 cm margins + one fascial plane. If clean, monitor; if dirty and re-excision isn't feasible, add radiation

2. Small, raised red-tan lump; FNA/biopsy = mast cell tumour (low/intermediate grade)
→ Plan: ~2 cm lateral margins + one fascial plane; if margins are close/dirty on a hard-to-cut site, post-op radiation is excellent insurance.

3. Dark red/black crusted plaque on thin belly skin; biopsy = dermal hemangiosarcoma
→ Plan: Wide local excision; prognosis is good if confined to the dermis and completely removed. Sun protection helps prevent new lesions.

4. Big, soft, movable fatty lump vs infiltrative lipoma

→ Ordinary lipoma: removal optional. Infiltrative: plan wide surgery, and discuss radiation if margins are not clean (recurrence ~30–50% with surgery alone).

5. Painful swollen toe; biopsy = digit SCC

→ Plan: Toe amputation; many dogs do well if caught before spread (1- and 2-year survival commonly reported after amputation).

6. Small button-like lump on a young dog; FNA suggests histiocytoma

→ Plan: Often watchful waiting after diagnosis—most regress on their own; remove if ulcerated/persistent.

Aftercare & monitoring

1. **Incision protection:** cone/E-collar, restricted activity, keep the area clean and dry.
   Call urgently for increasing redness, swelling, discharge, wound opening, fever, or lethargy.
2. Pathology review (about 5–10 days): margins and grade guide the need for re-excision, radiation, or simple observation.
3. Monthly "lump checks" at home: earlier detection = simpler treatment.

Selected English-language veterinary references

Soft-tissue sarcoma surgical margins/recurrence:
Milovancev M. Influence of surgical margin completeness on risk of local tumour recurrence in canine soft-tissue sarcomas (meta-analysis). Complete margins markedly lower recurrence.

Chiti LE et al. Surgical Margins in Canine Cutaneous Soft-Tissue Sarcomas—practical evidence on margin planning and outcomes.

Hildebrandt IM et al., 2025 (JAVMA). Multi-institution STS cohort: surgery ± RT and long-term control; recurrence ~17–31% in surgery+ RT cohorts.

Mast cell tumour (surgical margins):
Selmic LE et al., 2020. Systematic review—2–3 cm margins commonly used; approach tailored by grade/location.
Chu ML et al., 2020 (JAVMA). 2 cm vs 3 cm study for grade I–II MCT excision.

Hemangiosarcoma (dermal vs subcutaneous):
Ward H et al., 1994 (classic). Cutaneous HSA in 25 dogs: dermal HSA median survival ~780 days after surgery.
De Nardi AB et al., 2023 (review) summarising dermal vs deeper/systemic HSA behaviour.

Infiltrative lipoma:
Hauser A et al., 2024/2025. Infiltrative lipomas and radiotherapy: surgery-alone recurrence often ~30–50%; RT improves control when margins aren't clean.

Plasmacytoma (cutaneous):
Boostrom BO et al., 2017. Canine cutaneous plasmacytosis (21 cases): surgery usually curative; ~5% local recurrence, ~2% metastasis.

Digit squamous cell carcinoma:
Marconato L et al., 2021. Digital tumours in dogs—pooled survival after amputation (~50–83% at 1 yr; ~18–62% at 2 yrs).
O'Brien MG et al., 1992. Subungual SCC: 76% 1-yr and 43% 2-yr survival after amputation.

Polton G et al., 2024. Consensus guideline on canine melanoma: cutaneous vs oral/digital differences, treatment algorithms.