

# SURGICAL APPROACH TO CANINE MAMMARY TUMOURS

## INTRODUCTION AND OBJECTIVES

Canine mammary tumours (CMTs) are the most frequently diagnosed tumours of bitches, half of them being malignant. Prognosis depends on clinical stage and histologic malignancy grade.

Surgical treatment is the current gold standard when approaching CMTs but the intricacies and uses of the different techniques are still debated in the literature.

The objective of this final degree project is to offer a general and updated vision on CMTs and their treatment, focusing on surgical therapy and novel treatments that may be implemented in a future.

Table 1: Different surgical approaches to CMTs.

	Lumpectomy	Simple mastectomy	Regional mastectomy	Unilateral mastectomy	Bilateral mastectomy
Tumour size	+	++	+++	+++	+++
Number of tumours	1	1	>1	>>1	>>>1
Wound size*	4 ± 1 cm	6 ± 2 cm	11 ± 4 cm	24 ± 7 cm	2 × 24 ± 7 cm
Lymph node excision	No	No	Yes	Yes	Yes
Tumoral recurrence	+++	++	++	+	±
Nociceptive stimulus	+	++	+++	++++	+++++
Postoperative complications	-	+	+++	++++	+++++

\*Proportional to the size of the patient



An early detection leads to a better prognosis and less invasive surgery.



Figure 1: Intraoperative view of a lumpectomy (a) and unilateral mastectomy (b).

## Radiofrequency ablation

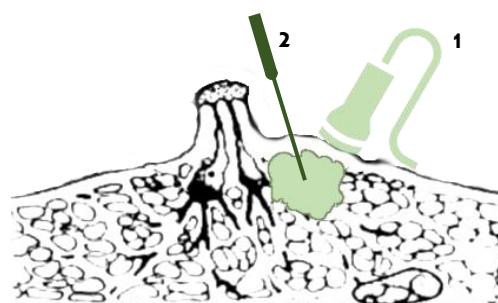


Figure 2: Cross section of a mammary gland with a small (<2cm) nodule. An ultrasound probe (1) guides the RFA ablation needle (2).

## OTHER CONSIDERATIONS

### Lymph nodes (LN) and CMTs, when should they be removed?

- It is indicated when a LN is enlarged or presents an abnormal parenchyma. Fine needle aspiration (FNA) may reveal the presence of metastatic cells.
- Lymphoscintigraphy and an intraoperative contrast may be useful tools to locate the axillary LN.

### The role of ovariectomy

- Spraying a bitch at an early age has been shown to prevent the development of CMTs.
- Ovariectomy at the time of tumour excision has a protective effect in tumours expressing sex hormone receptors (60 to 77% of CMTs).

## CONCLUSIONS

Diagnosis and staging of CMTs usually excludes FNA biopsy which can influence the therapeutic approach.

Lumpectomy and simple mastectomy are usually only indicated in benign tumours whilst malignant ones are excised by regional, unilateral or bilateral mastectomy; including the regional LN if it shows signs of metastasis.

Ovariectomy at the time of tumour excision can prevent tumoral recurrence in benign and low grade CMTs.

Novel treatments like RFA could become an alternative to surgery but more studies are needed to asses its efficacy in bitches.