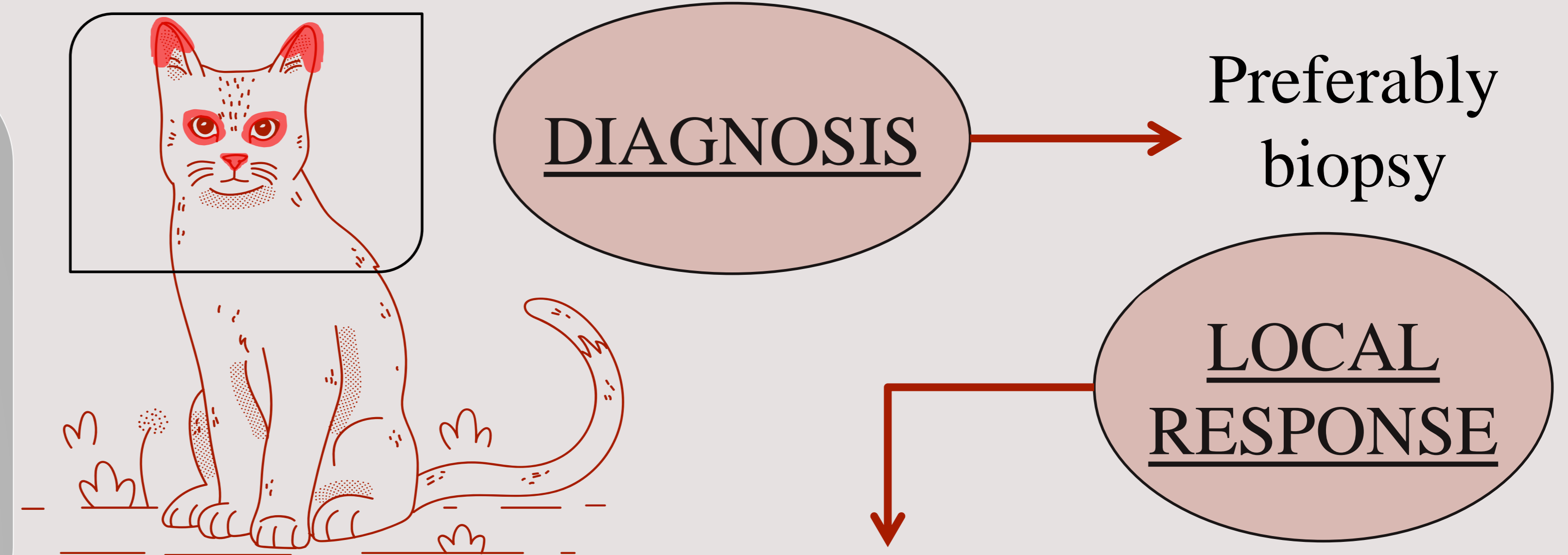


## INTRODUCTION

- **Squamous cell carcinoma (SCC)** is the most common malign tumor in cats found in areas of sparse or depigmented hair due to the chronic ultraviolet sun exposure.
- Initially seen as an erythematous-crusted lesion/s.
- Locally aggressive but slow to metastasize.



**Table 2.** Modified RECIST 1.1 criteria for solid tumors (Simčič *et al.* 2021; Tellado *et al.* 2022).

Complete response (CR)	Complete eradication of the treated tumor, with reepithelialization of the skin and no sign of primary tumor.
Partial response (PR)	Decrease $\geq 30\%$ in the sum of the diameters of the target lesions, taking as reference the diameters of the initial sum.
Stable disease (SD)	Tumor size does not show sufficient reduction ( $< 30\%$ ) to qualify as PR, nor sufficient increase ( $< 20\%$ ) to qualify as PD, based on the diameters of the smallest sum.
Progressive disease (PD)	$\geq 20\%$ increase in the sum of the diameters of the target lesions, taking as reference the smallest sum studied or appearance of one or more new lesions.

## STAGING

T <sub>0</sub>	No evidence of tumor.
T <sub>is</sub>	Pre-invasive tumor (carcinoma <i>in situ</i> ) without penetrating the basal membrane.
T <sub>1</sub>	Tumor $< 2$ cm in diameter, superficial or exophytic.
T <sub>2</sub>	Tumor 2-5 cm in diameter or with minimal invasion, regardless of size.
T <sub>3</sub>	Tumor $> 5$ cm in diameter or invading the subcutaneous tissue, regardless of size.
T <sub>4</sub>	Tumor invading other structures such as fascia, muscle, bone or cartilage.

**Table 1.** Tumor classification according to the World Health Organization (WHO) for feline tumors of epidermal origin (Owen 1976).

## OBJECTIVE

To compare electrochemotherapy (ECT) and cryosurgery for feline cutaneous SCC, based on practical cases and scientific literature.

## TREATMENTS

**Table 3.** Comparative summary of the advantages, disadvantages and applications of cryosurgery and electrochemotherapy (ECT).

### Advantages

- Easy, flexible and simple application.
- Short procedure with low bleeding and pain.
- Safe for non-liquid tissues.
- Low anaesthetic risk.
- No need for asepsis or antibiotics.
- Used alone or post-ECT for small regrowths.
- Minimally invasive and low cost.
- Effective as palliative or curative.
- Greater drug absorption with minimal toxicity.
- Minimal, self-limiting side effects.
- Low risk infection.
- Can be safely repeated.
- Alone or combined (for advanced cases).
- Applicable before, during or after surgery and for relapses.
- Induces a strong local immune response.

### Disadvantages

- Each lesion needs a biopsy before freezing.
- Permanent alopecia and depigmentation.
- Exudate, inflammation, edema, erythema and odor.
- SCC poorly defined: requires wide margins.
- Margins hard to evaluate,  $\uparrow$  relapse risk.
- Advanced nasal SCC has a  $\uparrow$  relapse risk.
- Difficulty using thermocouples in cats.
- Unclear immune stimulation effects.
- Higher anaesthetic risk: need intense sedation or general anaesthesia.
- Local inflammation, suppuration and discomfort; NSAIDs needed +/- opioids and antibiotics (in large lesions).
- Advanced nasal SCC: possible anosmia and anorexia.
- Necrosis if overused, once lesions are reduced.
- Complicated intratumoral administration in cats.
- Cisplatin (2<sup>nd</sup> most used drug), highly toxic in cats.

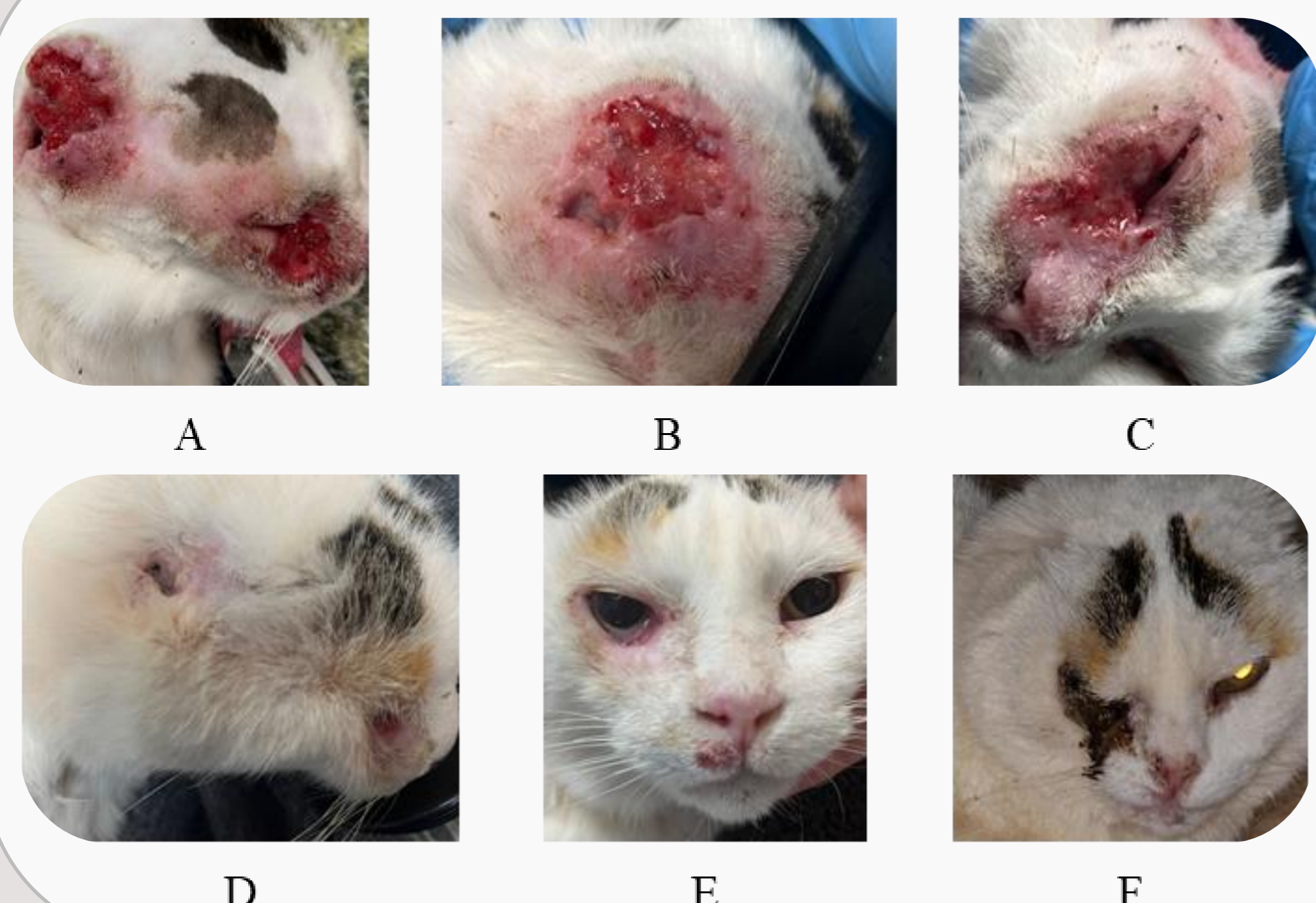
### Applicability

- **Spray:** for superficial ( $< 0.5$  cm) or large, irregular or diffuse lesions.
- **Cryoprobe:** for superficial or large lesions with a small surface area at the skin level.
- Also indicated for T<sub>1</sub> and T<sub>2</sub> stages (Murphy 2013).
- Ear and eyelid SCC: easy to handle with a 100% response rate.
- **Needle electrode:**
  - **Parallel needle:** for deep or superficial tumors of variable sizes (ESOPE\*: tumor  $< 4$  mm in diameter).
  - **Hexagonal needle:** for large and deep tumors.
- **Plate electrodes:** small and superficial nodules with few invasion (ESOPE\*: tumor  $> 4$  mm in diameter).
  - Useful for SCC of eyelids and ears.
  - Response rate around 80%.
  - For nasal SCC of  $> 2.5$  cm of invasion depth.

\*European Standard Operative Procedure for Electrochemotherapy.

## RESULTS OF CLINICAL CASES

- CR in 2 cases: cryosurgery and ECT (one session).



**Figure 1.** A. Feline patient with CCE in the right ear and right periocular in the first ECT session; B and C. Evolution of the right ear injury (B) and right eye (C), one week later; D and E. Evolution of both lesions 8 months after the second ECT session and new focus on the upper right lip; F. Same patient, two years after his first ECT session.

Photo provided by the HCV-UAB.

## CONCLUSIONS

- **Cryosurgery** is still effective for initial and small superficial lesions (till T<sub>2</sub> stage), with high CR rates (except in nasal SCC).
- **ECT** is highly effective and safe even in advanced stages and nasal SCC.
- Other therapies exist with higher relapse rate and less application ease.
- It's necessary to carry out additional studies, with a larger cohort of cases.