Feline Injection Site-associated Sarcoma (FISS)

Overview

Feline Injection Site-associated Sarcomas (FISS) are a rare but serious type of cancer that can develop in cats at the site of injections, including vaccines, long-acting medications, and non-absorbable suture materials. These tumours are aggressive and often require extensive treatment.

Key facts

- Incidence: Occurs in 1-10 cats per 10,000 injections.
- Common Sites: Typically occurs between the shoulder blades but can also present on the side of the chest, near the lower back, and on the thigh.
- High Recurrence Rate: Even with aggressive surgery, FISS often regrow due to its invasive nature.

Diagnosis

1.Cytology (Fine Needle Aspirate - FNA):

-What it is: FNA is a simple test that involves aspirating some cells from the lump with a needle (normally does not require sedation to perform). It is used to differentiate FISS from other causes like abscesses, granulomas (benign growths), or foreign body reactions. However, it is not always definitive for diagnosing FISS.

2.Histopathology (Biopsy):

-What it is: A biopsy is a test that can required general anaesthesia to be performed. It involves collecting surgically a small piece of the lump which is then sent for analysis. This is sometimes needed to confirm the diagnosis and grade the tumour. The grading is performed by a veterinary pathologist and helps determine the tumour's aggressiveness and likelihood of spread.

3.Imaging:

-Regional Imaging (CT scan): is often performed to evaluate the tumour extent and plan for surgery.

Appearance and Symptoms

- Appearance: FISS can present as a firm, rapidly growing lump at a previous injection site. The lump may be painful, feel adhered to underlying tissues, or cause changes in the overlying skin.
- Symptoms: Cats may show signs of discomfort or pain at the site, lameness if the tumour is on a limb, or difficulty moving if the tumour is in a location like the shoulder blades.

Staging

is a process used by veterinarians and oncologists to determine how advanced a tumour is and how far it has spread in the body. It involves a series of diagnostic tests and evaluations to assess the size of the tumour, its location, and whether it has metastasized (spread) to other parts of the body. Staging is critical to guide treatment options. The presence of metastasis significantly affects the prognosis and overall treatment plan. In a cat with suspected or confirmed FISS is typically performed with thoracic radiographs or CT scan (to check for lungs metastasis).

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Treatment Options

1.Surgery:

-Overview: Surgery is the primary treatment for FISS and should aim for wide surgical excision of the mass which aims to achieve clean surgical margins.

-Understanding surgical margins: the term refers to the edge or border of the tissue that is removed during surgery to treat a tumour. When a tumour is removed, the goal is to cut out not just the tumour itself, but also a small amount of healthy tissue around it. This extra tissue is called the margin, and it's removed to ensure that no cancerous cells are left behind.

-Why are margins important?

• Clear Margins (Clean Margins): If no cancer cells are found at the outer edge of the removed tissue, the margins are considered clear, clean, or negative. This suggests that the tumour has been fully removed, lowering the risk of recurrence.

• Incomplete Margins (Dirty Margins): If cancer cells are found at the edge of the removed tissue, the margins are considered incomplete, positive, or dirty. This indicates that some of the tumour may have been left behind, increasing the likelihood of the cancer returning.

-In practice: For tumours like FISS, achieving wide margins (removal of 5 cm of healthy tissue around the tumour and at least 2 fascial planes deep) is essential because these tumours are very invasive and tend to extend beyond the visible mass. Even a small amount of remaining cancer cells can lead to recurrence, which makes wide surgical margins a crucial aspect of successful treatment. For this reason, excisional biopsies (simple lumpectomy) are not recommended as they dramatically increase the risk of regrowth.

2.Radiation Therapy:

-When it's used: Radiation therapy is recommended in cases of marginal excision or when wide resection is not possible. It helps to extend survival and reduce the risk of local regrowth.

3.Chemotherapy:

-When it's used: Chemotherapy can be used in some cases (presence of spread or high chances of spread).

Prognosis

The prognosis for cats with FISS depends on several factors:

• Tumour Grade and Location: Higher-grade tumours and tumours in challenging locations have a worse prognosis.

• Surgical Margins: Clean, wide surgical margins significantly improve prognosis.

• Adjunctive Therapies: Radiation therapy and chemotherapy can further improve outcomes in cases with incomplete resection or presence of spread.metastatic disease.

Aftercare and Monitoring

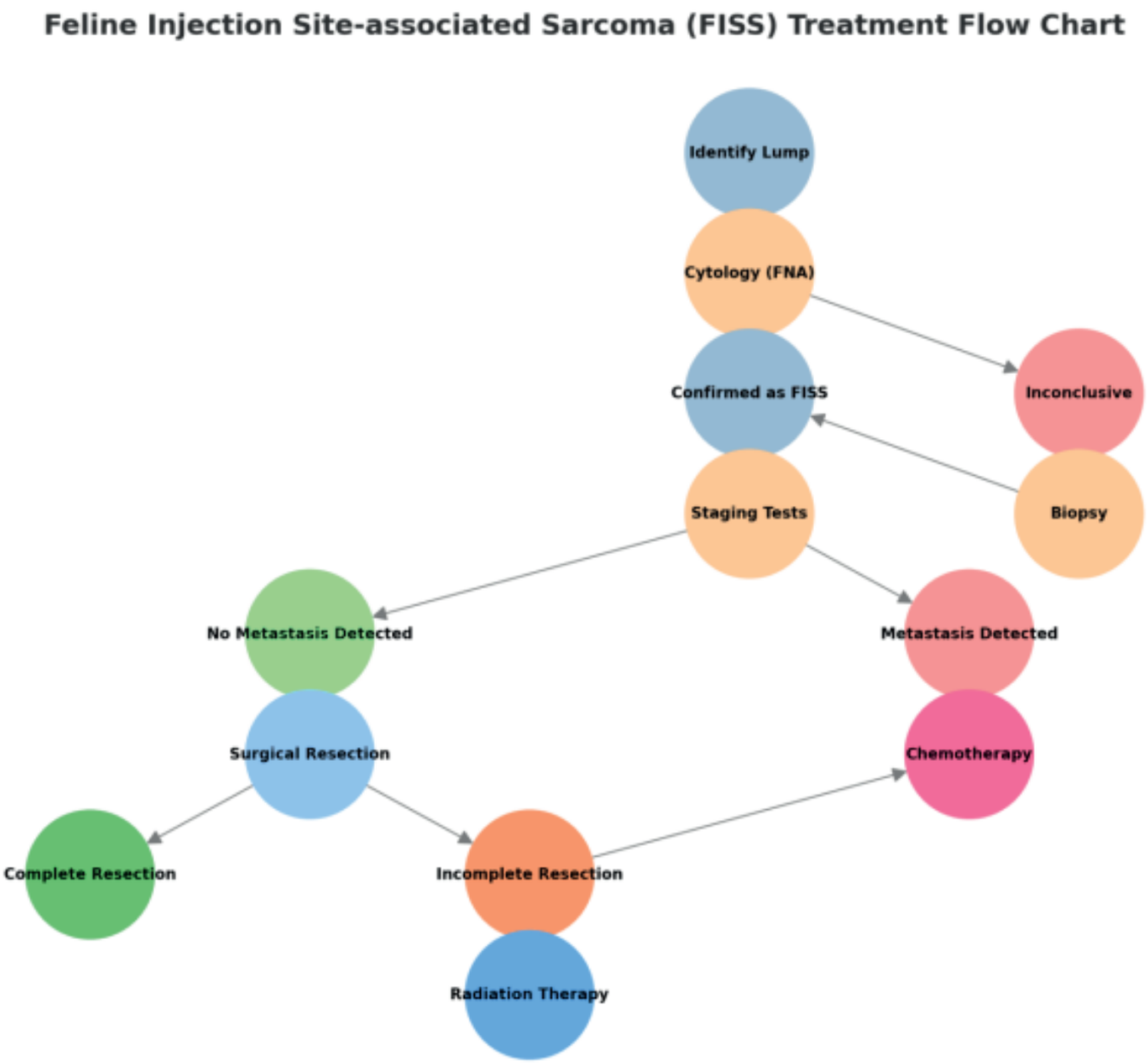
▪ Follow-up: Regular check-ups every 3 months are recommended after surgery to monitor for recurrence.

▪ Prevention: Avoid using non-absorbable sutures and consider using injection sites like the lower limbs that are more amenable to complete surgical excision if needed.

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