

SURGICAL MANAGEMENT OF FIBROMA IN A DOG: A CASE REPORT

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Abstract: A seven-year-old male German Shepherd dog was presented with the history of gradually enlarging, firm, pedunculated mass on the left stifle region. Clinical examination and fine needle aspiration confirmed it as a solid tumor. Surgical excision was performed under general anaesthesia using atropine, xylazine, and ketamine. The mass was completely excised, and histopathological examination confirmed it as a fibroma. Sutures were removed on the 12th post-operative day and the dog recovered uneventfully.

Keywords: German Shepherd, Skin Tumor, Surgical Excision, Fibroma.

Introduction

A tumor is defined as an abnormal growth of cells that results from uncontrolled or excessive cellular proliferation. Among different tumours, skin and subcutaneous tumors are particularly prevalent in dogs due to their visible or palpable nature, often prompting early diagnosis and treatment (Slatter, 2003; Tostes *et al.*, 2017). The skin, as the largest organ of the body, is prone to various tumors, both benign and malignant. Fortunately, approximately 60-80% of skin tumors in dogs are benign, with surgical excision being the most effective and widely practiced treatment modality (O'Brien, 2003; Senthil *et al.*, 2020). Fibromas are one of the most common benign skin tumors in dogs, originating from fibroblasts within the dermis and subcutaneous connective tissue (Goldschmidt and Hendrick, 2002). These tumors typically present as solitary, slow-growing masses, commonly found on the limbs, flanks, groin, and head (Goldschmidt and Hendrick, 2002). Their consistency can vary, appearing either firm or soft, and they may be pedunculated or non-pedunculated, sometimes containing melanin pigment (Conroy, 1983). The etiology of fibromas is multifactorial, involving genetic predisposition, chronic stress, radiation exposure, viral infections, hormonal imbalances, and previous trauma or inflammation (Hargis *et al.*, 1992). Given their benign

nature, fibromas are typically managed through complete surgical excision, which is considered curative in most cases (Goldschmidt and Hendrick, 2002). This article presents a case of fibroma in the stifle region of a dog, detailing the diagnostic approach, surgical management, and successful outcome.

Case History and Diagnosis

A seven-year-old male German Shepherd dog was presented to the Department of Veterinary Clinical Complex, College of Veterinary Science, Garividi with the history of a gradually enlarging growth on the left stifle region from past two months (Fig. 1). The owner reported that the growth was causing discomfort to the dog, particularly during movement, and the dog was frequently licking the area. On clinical examination, the mass was found to be firm, pedunculated and attached to the skin by a stalk. Physical examination and fine needle aspiration confirmed the mass as a solid tumor. Surgical excision was recommended to prevent further complications and to provide relief to the animal. The excised growth was sent for histopathological evaluation in 10% Neutral buffered formalin.

Surgical Treatment

The dog was premedicated with Atropine sulphate @ 0.04 mg/kg body weight and Xylazine Hcl @ 1 mg/kg body weight intramuscularly. General anesthesia was induced and maintained using Ketamine Hydrochloride @ 5 mg/kg body weight intravenously. The dog was positioned in lateral recumbency with the affected side upward. The surgical site was prepared aseptically (Fig. 2). A curved incision was made around the base of the mass, ensuring complete excision of the tumor. Hemostasis was achieved using hemostatic forceps and ligatures. Care was taken to excise the deep tissue around the stalk to minimize the risk of recurrence. The wound was closed using interrupted sutures with nylon (Fig. 3). Post-operatively, the dog was administered Ceftriaxone @ 20 mg/kg body weight intramuscularly for 5 days and Meloxicam @ 0.2 mg/kg body weight for 3 days to manage pain and to prevent infection. The owner was advised to prevent the dog from licking or biting the surgical site by using an Elizabethan collar. Sutures were removed on the 12th post-operative day, and the dog was recovered uneventfully.

Histopathological examination revealed neoplastic proliferation of fibrous tissue component composed predominantly of differentiated fibrocytes and few immature fibroblasts. The neoplastic cells were arranged in bundles or in a whorl like pattern (Fig. 4). Diffuse areas of collagen deposition were also evident amidst the neoplastic cells. Based on these observations, the present case was diagnosed as hard fibroma.

Discussion

Skin tumours are among the most frequently diagnosed dermatological abnormalities in animals (Sischo *et al.*, 1989). The high incidence of skin tumours can be attributed to the continuous exposure of the integument to various chemical and physical stressors (Hargis *et al.*, 1992). Tostes *et al.* (2017) reported that mast cell tumours (17.87%) and squamous cell carcinomas (10.09%) are the most common skin tumours in dogs, with fibromas contributing only 0.86% of all skin tumours. Fibromas are benign neoplasms that can arise from any connective tissue, most commonly in the subcutaneous tissue of the head, neck, shoulders, and limbs (Vegad, 2012). The prevalence of fibromas in dogs has been noted to be higher in middle-aged animals (4-10 years), with a slight predilection for females (Lather *et al.*, 2017). This highlights the rarity of fibromas in comparison to other skin neoplasms. The present case underscores that fibromas can grow to significant sizes, and surgical resection under general anaesthesia remains the treatment of choice. The exact etiology of fibromas remains unclear, but prior injury or inflammation at the site may contribute to their development (Jubb and Kennedy, 1963). In this case, a history of trauma in the stifle region may have been a predisposing factor. Histopathological examination confirmed the case as hard fibroma, revealing fibrous connective tissue composed of neoplastic fibroblasts and fibrocytes. The cells were well differentiated with abundant collagen deposition revealing the benign nature of the neoplasm (Scott, 2007). Surgical resection of skin tumours is generally straightforward in dogs due to their loose skin, a finding supported by O'Brien (2003). The tumour was successfully resected under general anaesthesia using an atropine-xylazine-ketamine combination, which proved effective for the surgical procedure. Surgical excision of fibromas under general anaesthesia has been reported to be curative, with no post-operative complications (Gokulakrishnan *et al.*, 2020; Gupta *et al.*, 2020). Similarly, in this case, complete surgical resection was successful and no complications were observed during the follow-up period.

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Fig. 1: Gross view of pedunculated mass at left stifle region

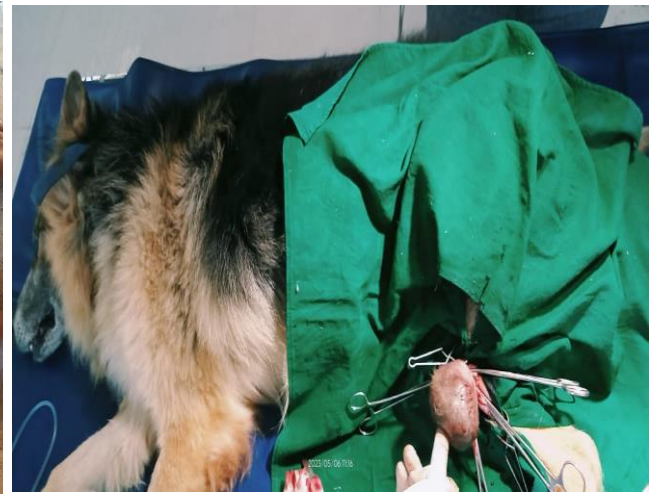


Fig. 2: Aseptic preparation of surgical site

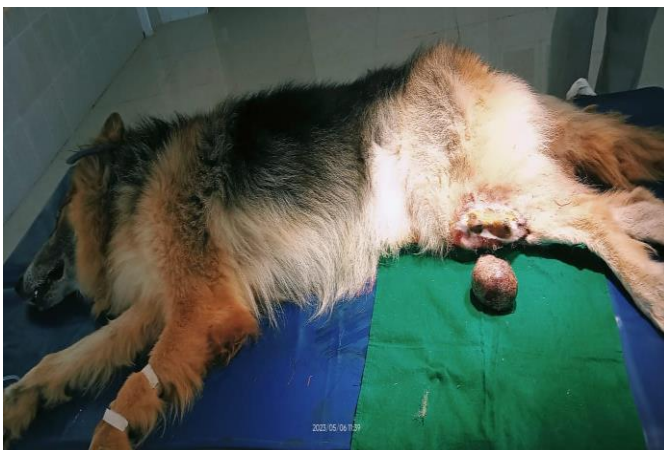


Fig. 3: Surgically excised tumor mass

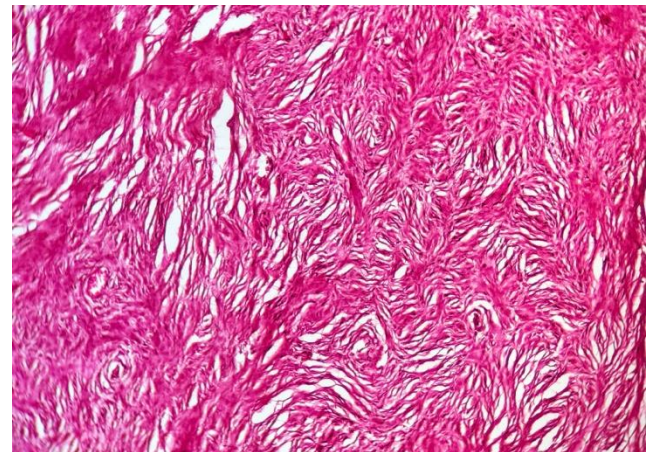


Fig. 4: Neoplastic fibrocytes and fibroblasts forming bundles along with collagen deposition. H&E X100