

## CASE REPORT

## Mammary Hypertrophy in an Ovariohysterectomized Cat

B. P. PUKAY AND D. A. STEVENSON

*Bayview Animal Hospital, 101A Champagne Avenue,  
Ottawa, Ontario K1S 4P3 (Pukay) and  
Veterinary Services Laboratory, Kemptonville, Ontario K0G 1J0 (Stevenson)*

*Summary*

A four year old ovariohysterectomized domestic short-haired cat under treatment for behavioral urine spraying and idiopathic alopecia developed mammary gland hypertrophy following treatment with megestrol acetate. Withdrawal of the progestin and treatment with androgen failed to cause regression of the hypertrophy. The affected mammary gland was surgically excised and recovery was uneventful.

*Résumé***Hypertrophie mammaire chez une chatte qui avait subi une ovariohystérectomie**

Une chatte domestique, âgée de quatre ans et castrée, développa une hypertrophie mammaire, à la suite d'un traitement à l'acétate de mégestrol destiné à corriger un marquage urinaire et une alopecie idiopathique. Le remplacement de ce traitement par un autre à base d'androgènes ne réussit toutefois pas à provoquer la régression de l'hypertrophie mammaire. Les auteurs décidèrent par conséquent de procéder à l'excision chirurgicale des deux glandes mammaires lésées et la chatte guérit sans difficulté.

*Introduction*

Feline mammary hypertrophy (FMH) has been reported in the litera-

ture but very little detailed clinical information is available. Feline mammary hypertrophy has been reported under a variety of terms: fibroepithelial hyperplasia, fibroadenomatous hyperplasia, mammary adenomatosis, and benign mammary hypertrophy. The preferred term is feline mammary hypertrophy. It is thought to be a progesterone-dependent dysplastic change in the mammary gland (1). The progesterone may be of endogenous or exogenous origin. Affected cats apparently lack estrogen receptors throughout their mammary glands, but have progesterone receptors (2).

Feline mammary hypertrophy is a benign condition which develops rapidly within a two to five week period. It usually occurs in young, estrous cycling or pregnant cats (3,4). In one study (1), the majority (85%) were sexually intact females one and one-half years or less. The condition has been reported in 18 young intact female cats in otherwise good health: 11 of these cats had not received any exogenous hormone, and no information is available regarding hormonal treatment in the other seven (2). It is a relatively uncommon complication in neutered male and female cats which have been given progestins (2).

The following is a report of atypical FMH in an ovariohysterectomized cat.

*History*

A four year old ovariohysterectomized domestic short-haired cat weighing approximately 3 kg was presented to the Bayview Animal Hospital because of alopecia and "eczema" in the inguinal region, and because of behavioral urine spraying in the home. The cat had been treated one month earlier at another hospital with 10 mg methylprednisolone acetate<sup>1</sup> intramuscularly.

*Clinical Findings*

The cat was excitable and nervous. Alopecia and a well-demarcated patch of moist pyoderma in the inguinal region were observed. No other abnormalities were found on general physical examination.

A diagnosis of idiopathic lick granuloma with concurrent behavioral urine marking was made.

*Treatment*

The cat was given megestrol acetate<sup>2</sup> orally at a dose of 5 mg every other day (1.5 mg/kg approximately) until improvement occurred, then 5 mg weekly.

The cat was presented two months later because of two large, firm, painless lumps in the mammary glands. A diagnosis of mammary gland hyperplasia was made and the owner was told to discontinue progestin therapy.

After three weeks, no reduction was

<sup>1</sup>Depomedrol, Upjohn, Toronto, Ontario.

<sup>2</sup>Ovaban, Schering Canada, Pointe Claire, Quebec.

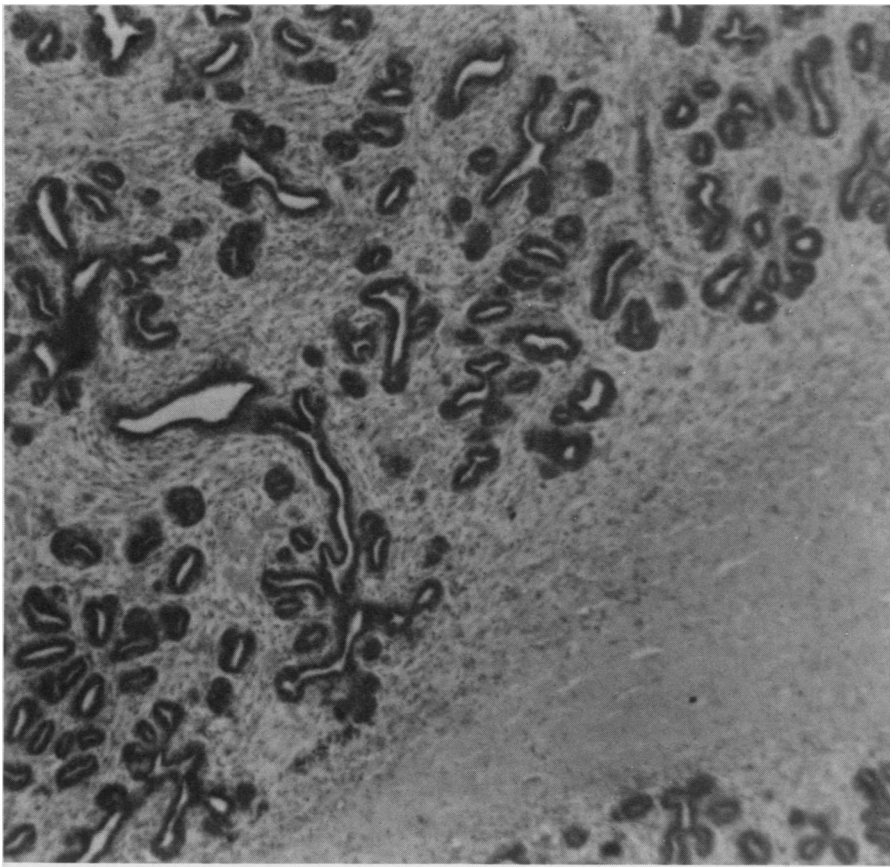


FIGURE 1. Feline mammary hypertrophy: fibroepithelial proliferation. Note large amount of collagen in the connective tissue band (lower right).

noted in the size of the mammary masses. The cat was now licking at the area excessively and the region was ulcerated, pink and thickened. The cat was injected with 5 mg testosterone<sup>3</sup> intramuscularly. An antipruritic anticholinergic cream was applied topically.<sup>4</sup>

After two weeks, the size of the masses in the mammary glands had not changed, but they had become abraded and ulcerated due to the mechanical trauma of constant licking. The growths were completely

excised and recovery from the surgery was uneventful.

#### *Histopathology*

The nonencapsulated masses were similar and were composed of epithelial-lined ductal structures supported by proliferating connective tissue (Figure 1).

Connective tissue with varying amounts of collagen divided the mass into lobules. Mitotic figures (1-3/hpf) were present in some hyperchromic epithelial cells and in an occasional fibroblast.

#### *Discussion*

Feline mammary hypertrophy usually occurs in young estrous-cycling or pregnant cats and the majority (85%) are usually intact females one and one-half years or less (1,3,4). This case is atypical in that it occurred in a four year old ovariohysterectomized cat.

Megestrol acetate has been recognized as being a cause of FMH in the cat. Since the cat was ovariohysterectomized and the mammary glands appeared normal at the time of initial examination, the megestrol acetate was suspected of having contributed to or causing FMH in this cat.

Treatment of the majority of FMH cases reported consisted of surgically removing the enlarged mammary gland and/or ovariohysterectomy. In this case, withdrawal of progestin therapy and initiation of androgen therapy was first attempted, and proved ineffective in reducing the size of the masses.

As there is no acceptable or recognized therapeutic regimen described in the literature for FMH, more research is necessary to determine whether or not hormonal therapy can be an effective treatment or whether surgical excision is the only method of treating FMH in ovariohysterectomized cats.

#### *References*

1. ALLEN HL. Feline mammary hypertrophy. *Vet Pathol* 1973; 10:501-508.
2. HAYDEN DW, JOHNSTON SD, KIANG DT, JOHNSON KH, BARNES DM. Feline mammary hypertrophy/fibro adenoma complex: clinical and hormonal aspects. *Am J Vet Res* 1981; 42:1699-1703.
3. GRAHAM TC, WILSON J. Mammary adenoma associated with pregnancy in the cat. *Vet Med Small Anim Clin* 1972; 67:82-84.
4. HINTON M, GASKELL CJ. Non-neoplastic mammary hypertrophy in the cat associated with pregnancy or with oral progestogen therapy. *Vet Rec* 1977; 100:277-280.

<sup>3</sup>Testosterone, Haver-Lockhart, Mississauga, Ontario.

<sup>4</sup>Variton, Schering Canada, Pointe Claire, Quebec.

Dr. R.G. Thomson is responsible for the "Historical Column" currently being featured in the Canadian Veterinary Journal. Readers are invited to send items, papers, suggestions, pictures, comments, etc., to Dr. Thomson, Department of Veterinary Pathology, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, Saskatchewan S7N 0W0