

Clinical evaluation of the complications found in bitches after total bilateral mastectomy operations

ISMAIL KIRSAN*, MELIH UCMAK*, SINEM APAYDIN*

*Department of Obstetrics and Gynaecology, Faculty of Veterinary Medicine, Istanbul University
P.O. Box 34320 Avcilar, Istanbul – Turkey

Kirsan I., Ucmak M., Apaydin S.

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Summary

The aim of the study was to investigate early and late postoperative complications and their incidence in bitches undergoing total bilateral mastectomy surgery for diagnosed mammary gland tumor growths. The study investigated a total of 40 bitches operated under general anesthesia for surgical removal of affected tissues and retained under clinical control for the postoperative duration of one year in order to trace any clinical complications.

Early postoperative complications included inflammation (in 15 cases), hyperemia (in 5 cases), infections with discharge (in 5 cases), edema in the inguinal region and hind legs (in 10 cases) and local suture openings on the operated wounds (in 5 cases). No mortality was included in either early or late postoperative complications.

In conclusion, the dramatically positive effects on life span and quality make 'total bilateral mastectomy technique' a clearly advisable choice in the treatment of canine mammary gland tumors.

Keywords: bitch, mastectomy, complication

Mastectomy is the name to the removal of mammary glands surgically and currently is the most indicative treatment for the bitches which developed mammary tumours (5, 6, 11, 15).

There are various surgery methods that are used for the therapy of the mammary tumours including local mamnectomy, local mastectomy, total unilateral mastectomy and total bilateral mastectomy (6, 15).

In modern veterinary practice, total bilateral mastectomy has almost been the most common indication for the mammary tumours in bitches as has more advantages than those cited above, in that it especially practically cut down the risk of recurrence, in most cases improves life quality and prevents potential economic losses (7-10).

Infections, hematoma, seroma and pain in operated lesions might complicate the cases because of the dermal stress of the local sutured skin, cuts on the nerves and removal of lymphatic nodes, in evitable for total bilateral mastectomy (4, 13, 14).

The aim of this study is to investigate early and late postoperative complications witnessed due to total bilateral mastectomy surgeries and trace the incidences of occurrence.

Materials and methods

In this study in the Department of Obstetrics and Gynaecology of Faculty of Veterinary Medicine, 40 bitches of

various breeds with an average age of 10.3 years (6-16) were operated on, for a diagnosed mammary tumour with the total bilateral mastectomy surgery.

After a detailed case history, clinical examination procedures were started by inspection, then the palpation of mammary glands and regional lymphatic nodes and radiographic thorax films were obtained for each bitch under the study. Their body temperature, pulsation and respiration rates, total haemogram values and some biochemical parameters (i.e. data for a general clinical picture) – Urea, Creatinine, Creatininekinase, AST, ALT and glucose levels – established. The bitches which were in good health balance otherwise the mammary tumours with the lack of pulmonary metastasis, experienced total bilateral mastectomy. Anesthesia were induced with a combination of tiletamin + zolazepam and were sustained with a 1-2% volume isoflurane and oxygen. The incision line to the skin around the glands were performed running about as far apart as 1 cm out of the whole mammary glands. Mammary complex were dissected from muscles and abdominal fascia by the aid of a pair of scissors. Vicryl ligatures were applied to the vessels for the purpose of hemostasis. The operated areas were cleaned with a ringer lactate solution after the removals completed. The wounds were covered up, first with simple interrupted vicryl sutures applied on to the subdermal tissues, forming a layer, then the skin fixed with simple interrupted propilen sutures over the first layer. For the first ten postoperative days all bitches received an antibiotic (enrofloxacin; 5 mg/kg body mass s.c) and a combi-

nation of B complex and C vitamin (epargriseovit; 1 ml/per bitch i.m). In the operation day and for the five postoperative days, to try to kill the pain, carprofen in a dosage

Tab. 1. Mammary tumour distribution into the age and breed groups

Breeds	Age				Total breed	
	1-4	5-8	9-12	13-16	Number	%
Terrier	-	3	17	4	24	60.00
Cocker	-	1	2	-	3	7.50
Dobermann	-	-	1	-	1	2.50
German Pointer	-	-	1	-	1	2.50
Corgi	-	-	1	-	1	2.50
Tibet Spaniel	-	-	1	-	1	2.50
Pinscher	-	-	1	-	1	2.50
German Shephard	-	-	1	-	1	2.50
Pekingese	-	1	-	-	1	2.50
Collie	-	-	-	1	1	2.50
Cross-breed	-	1	4	-	5	12.50
Total	-	6	29	5	40	100.00

Tab. 2. Mammary tumour distribution in the lobes

Mammary lobes	Total	
	Number	%
Cranial and Caudal Thoracal	30	15.00
Cranial and Caudal Abdominal	55	27.50
Inguinal	65	32.50
Various	50	25.00
Total	200	100.00

Tab. 3. The distribution of benign and malign mammary tumours according to their clinical aspects

The histopathological tumour definition	Clinical aspects	Number
Benign	Capsulated	60
	Mobile under the skin	
	Slow developed	
	Non-inflammatory	
Malign	Non-ulcerative	138
	Non-capsulated	
	Fast developed	
	Non-inflammatory	
	Non-ulcerative	
	Non-capsulated	
Malign	Fast developed	2
	Inflammatory	
	Ulcerative	
Total		200

of 4 mg/kg body mass was administered s.c once daily. Elizabeth collar were dressed, out of a precaution to provide enough prohibition against licks or bitings to the wounds. In the tenth day of the surgery the skin sutures were removed under control.

The cases have all been detained under clinical consideration for any complicative occurrence, for one year.

Results and discussion

400 Mammary lobes resected from 40 cases of total bilateral mastectomy were examined clinically and pathologically, having led to the tumour detection in 200 lobes.

The inclusion, subjected, consisted of 24 Terrier (60%), 3 Cocker (7.5%), 1 Dobermann (2.5%), 1 German Pointer (2.5%), 1 Corgi (2.5%), 1 Tibet Spaniel (2.5%), 1 Pinscher (2.5%), 1 German Shephard (2.5%), 1 Pekingese (2.5%), 1 Collie (2.5%) and 5 cross breed (12.5%) dogs. The average age of these 40 cases was found to be 10.3 years (6-16), (Table 1).

30 of the tumours (15%) occurred in thoracal lobes, 55 of the tumours (27.5%) in abdominal lobes, 65 (32.5%) in inguinal lobes and 50 (25%) in various mammary lobes, the highest incidence witnessed in inguinal lobes (Table 2).

The collected tumours were classified into 60 benign (30%) and 140 malign (70%) cases histopathologically. In clinical examinations, it was determined that the benign mammary tumours were all mobile under the skin with a capsule and were neither inflamed nor ulcerated while 138 of malign mammary tumours were fast developed, non-inflammatory, non-ulcerative, non-capsulated and 2 them were fast developed, inflammatory and ulcerative and with the lack of a capsule (Table 3).

Early postoperative complications observed, included inflammation in 37.5% of the cases (15/40), hyperemia in 12.5% (5/40), infection with discharge in 12.5% (5/40), while edema witnessed in inguinal area and in hind legs in 25% of the cases (10/40) and local wound openings in 12.5% of the cases (5/40) (Table 4).

Incidental inflammation developed in some thoracal, abdominal and inguinal areas, each of the three

Tab. 4. Early postoperative complications

Complications	Area			Total	
	Thoracal	Abdominal	Inguinal	Number	%
Hyperemia	3	1	1	5	12.50
Inflammation	5	5	5	15	37.50
Infection with discharge	2	-	3	5	12.50
Edema	-	-	10	10	25.00
Local wound openings	2	-	3	5	12.50
Total	12	6	22	40	100.00

complication in the same rate of 33% while the wound openings coincided 40%, 0% and 60% respectively. All complications were treated with appropriate regime at the proper time.

At the end of the first postoperative year no complication, recurrence and no mortality occurred; to be called „a late postoperative finding”.

Having been most incidental in older bitches the mammary tumours might seen from middle age (3, 16).

The subjected averaged 10.3 years of age. Many studies (1-3, 12, 17) will reveal that more tumours have occurred in inguinal mammary lobes, rather than on those in other regions. We also found more tumours in the lobes from inguinal regions (32.5%), correlating here, the results of these workers.

In literature there are different rates about the benign and malignant tumour growths (1, 12, 17). Vural and Aydın (12), demonstrates it to be 28.8% for benign and 71.2% for malignant growths, close to our finding of 30% and 70% for it, respectively. It is not a liability for the operation that the tumours are either benign or malign. However it is informed that mammary tumour types does not effect the postoperative complication rates too much (4, 13-15). In this study various postoperative complications were seen in all cases after the removal of the tumours whether they were determined benign or malign.

Many researchers reported (4, 13, 14) such early postoperative complications as infection, hematoma, seroma and pain upon total bilateral mastectomy cases. Of the 40 bitches, subjected to this study, in 15 inflammation, in 5 hyperemia, in 5 infection with discharge, in 10 edema in inguinal regions and hind legs and in 5 local suture opening complications were observed. We also found more wound complications fall onto sternal (30%) and inguinal (55%) localities than onto other localities, a finding here confirms those of some other researchers (13, 14).

The most common side effect of the removal of inguinal and/or axillary lymph nodes seems to be local edema in inguinal area and/or in hind legs (14). To reduce any metastasis risks, we surgically removed all axillary and inguinal lymph nodes, and local edema developed in inguinal area and in hind legs in 25% of our cases, a fact confirming the reported values in literature.

In our cases, we found non residual complicative condition, no recurrence and no mortality incidence within the first postoperative year, a fact confirmative to the literal data (14) and so far positively indicative to the surgical removal of all the mammary complexes and lymphatic nodes by total bilateral mastectomy technique.

In conclusion dramatical effects over the life span and quality, makes „total bilateral mastectomy technique” a severitly advisable choise in the treatment of canine mammary gland tumours.

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Corresponding Author: Ismail Kirsan, DVM, PhD, Assoc. Prof. Istanbul University, Faculty of Veterinary Medicine, Department of Obstetrics and Gynaecology P.O. Box 34320, Avcılar, Istanbul – Turkey; e-mail: krsan@istanbul.edu.tr

HOELZLE L. E., CORBOZ L., OSSENT P., WITTENBRINK M. M.: Tularemia u trzymanej w niewoli małpy tamarin (*Leontopithecus chrysomelas*) w Szwajcarii. (Tularaemia in a captive golden-headed lion tamarin (*Leontopithecus chrysomelas*) in Switzerland). Vet. Rec. 155, 60-61, 2004 (2)

Małpa tamarin (*Leontopithecus chrysomelas*) urodzona w ogrodzie zoologicznym w Szwajcarii i przebywająca przez całe życie w klatce na terenie ogrodu zoo padła w wieku 2 lat. Przed padnięciem wystąpiła biegunka o niewielkim nasileniu. Badaniem sekcyjnym stwierdzono obecność licznych jasnożółtych ognisk o średnicy do 2 mm pod torebką i w mięszu śledziony. W preparatach histologicznych występowały zmiany typowe dla ostrego, wielogniskowego, rozlanego ropnego zmartwiającego zapalenia śledziony. Ze śledziony, wątroby i nerek wyosobniono w czystej hodowli *Francisella tularensis*. Identyfikację bakteriologiczną zarazka potwierdzono testem PCR. Badanie serologiczne surowicy testem ELISA pochodzących od 6 pozostałych przy życiu małp trzymanyh w klatkach w sąsiedztwie padłego zwierzęcia wypadło ujemnie. Z kału tych małp nie wyizolowano *F. tularensis*.