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Patient Survival Periods and Death Causes Following Surgical Treatment of Mammary Gland Tumours Depending on Histological Type of Tumour: Retrospective Study of 221 Cases

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Abstract

This retrospective study evaluated a canine patient group operated on for mammary neoplasms (221 females). After surgical treatment, the animals were divided based on histological findings into groups and subgroups according to the WHO system. In the individual groups and subgroups the length of their survival following a mammary tumour surgery and death causes were followed. Of their total number, 164 tumours were malignant, 39 were benign and 18 were mammary hyperplasias. With regard to malignant tumours, invasive tubular carcinoma (20.81%) was identified most frequently; fibroadenoma reached the highest occurrence (10.41%) as regards benign tumours. The length of survival in females with malignant tumours ranged from 12 to 37.4 months, depending on histological subtypes. In females with benign mammary neoplasms the length of survival ranged from 39.1 to 59.3 months and in animals with hyperplasia it was 50.2 months. As a result of mammary tumour, 41 females (25%) died in the malignant tumour group, none died in the benign tumour group and 2 females (11.1%) died in the hyperplasia group.

The survival periods in surgically treated patients with mammary tumours were shorter for solid and complex carcinomas, compared to patients affected with the remainder of the histological subtypes. The longest survival period following operation was recorded in the group suffering from adenoma. The least favourable illness prognosis for patients with mammary tumours in respect to linking the death cause to the mammary tumour was for those having invasive papillary carcinoma. The most favourable illness prognosis was for patients with benign tumours and non-invasive tubular carcinoma. A frequent death cause in females with mammary tumours was another illness unrelated to mammary tumours.

Mastectomy, metastasis, carcinoma, neoplasm, hyperplasia, dog, cancer mammae

Mammary tumours are the most frequently diagnosed tumorous conditions in female dogs and according to some authors amount to as many as 42% of all tumours (Sorenmo et al. 2000; Sorenmo 2003; Misdorp et al. 1999), their incidence being triple the incidence of breast tumours in women (Schneider 1970; Owen 1979).

The studies report that mammary tumours occur most frequently in female dogs at 8.5-11 years of age, specifically at ages of 8.5 (Chang et al. 2005), 9 years (Morris et al. 1999), 9.3 years (Hellmén et al. 1993), 10 years (Zatloukal et al. 2005), 10.5 years (Sorenmo et al. 2000) and 11 years (Philibert et al. 2003).

Mammary malignant tumours in female dogs are claimed to range between 36-82%, more accurately to be 36% (Morris et al. 1999), 40-50 % (Sorenmo 2003), 56% (Qiu et al. 2008), 68% (Hellmén et al. 1993), and 82.7% (Wey et al. 1999). The prognosis for patients with benign tumours is favourable (Misdorp et al. 1999; Philibert et al. 2003). Numerous clinical studies deal with the analysis of factors influencing the prognosis of illness and survival periods of patients with malignant mammary tumours. Some of them explore the effect of breed (Philibert et al. 2003; Chang et al. 2005), others that of castration or age, the time of castration (Alenza et al. 2000; Sorenmo et al. 2000;

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Philibert et al. 2003; Yamagami et al. 1996), still others follow the effect of old age (Philibert et al. 2003), body condition (Shofer 1989; Philibert et al. 2003), size and location of tumour (Chang et al. 2005) and scope of intervention (Stratmann et al. 2008).

The prognostic factors in patients with mammary tumours include histological type and subtype of tumour, whose establishment allows for a more accurate prognosis and choosing adequate therapy (Hellmén et al. 1993; Hedlund 2007; Philibert et al. 2003), or a suitable supplementary therapy (Sorenmo 2003; Philibert et al. 2003).

Clinical studies state that 25-40% of females after surgery for malignant mammary tumours survive two years after the procedure (Sorenmo 2003; Morris et al. 1996). The survival periods in these patients range from 1.7 to 39.5 months (Sorenmo et al. 2000; Hellmén et al. 1993; Morris et al. 1999; Chang et al. 2005). These studies of survival in relation to different types of tumours use the older method of mammary gland classification (Hampe and Misdorp 1974), i.e. adenocarcinoma and other carcinomas (Sorenmo 2000; Philibert et al. 2003), or they use a completely different histological classification of tumours (Chang et al. 2005; Stratman et al. 2008). Some authors present metastases or mammary tumour recurrence as the cause of patient death following surgery, regardless of the histological type of tumours (Sorenmo 2003). Others only state the length of survival without a comprehensive evaluation of death causes (Chang et al. 2005; Morris et al. 1999).

Our study focused on a) determining the incidence of individual histological types and subtypes of mammary tumours based on the WHO classification, and b) analyzing the death causes and survival periods of females after the mammary tumour surgical treatment in the most complete way possible, in relation to the tumour histological types (subtypes).

Materials and Methods

Females (n = 221) included in the patient group had mammary tumours treated at the Department of Surgery and Orthopaedics of Small Animal Clinic University of Veterinary and Pharmaceutical Sciences Brno from 2000 to 2004. The average age of patients was 9.7 years, ranging between 2-14.5 years of age. The patient group comprised 190 females (86%) of pedigree females and 31 cross-breed females (14%). For every female dog the following data were recorded: age, breed, histological type and subtype of tumour, survival period, death cause, and tumour size. All tumours were surgically removed from nodulectomies to total bilateral mastectomy. Tumour samples were fixed using a 10% buffered formaldehyde solution and sent for standard histological examination (haematoxylin-eosin staining), carried out at the Department of Anatomy, Histology and Embryology of the University of Veterinary and Pharmaceutical Sciences, Brno. Postoperatively, patients were taken for health checks once in every six months until the patient's death. The preoperative and control examinations included apart from clinical examination, radiological lung examination made in two projections (right and left latero-lateral chest projection), and also laboratory blood examination in indicated cases, ventro-dorsal chest projection and ultrasonographical examination. In the case of euthanasia or death, *post mortem* examination was made based on agreement with dog owners.

Table 1. Histological cassification of mammary tumours, modified WHO classification (1999)

1. Malignant tumours
1.1. Noninfiltrating *in situ* carcinoma
1.1.1. papillary
1.1.2. tubular
1.2. Infiltrating carcinoma
1.2.1. complex
1.2.2. tubular
1.2.3. papillary
1.2.4. solid
1.2.5. anaplastic
1.2.6. Special types of carcinomas
1.3. Sarcoma
1.4. Carcinosarcoma
2. Benign tumours
2.1. adenoma
2.2. fibroadenoma
2.3. benign mixed tumour
3. Hyperplasia

For monitoring the survival periods after mastectomy we divided the females into groups based on histological diagnoses following from the WHO classification (Table 1) of mammary tumours. We completed the evaluation in 2008, i.e. at least 4 years after the last surgical intervention (mastectomy). The survival periods between the individual patient groups were statistically assessed using the Kruskal-Wallis test and Nonparametric Multiple Comparisons test (KyPlot programme, Version 2.0 beta).

In terms of death causes we divided the patients into 5 groups. Group 1 comprised females that died or were put down because of

relapses or mammary tumour metastases (metastases were proved by radiological examination or postmortem). Group 2 comprised females that died or were put down because of another illness diagnosed at our centre, by a private veterinary surgeon, or *post mortem*. Group 3 included females that died of unknown causes (sudden death without identified causes). Group 3 included females that died of old age and group 5 included females living at the point of the study completion, i.e. minimally 4 years after surgery. Females that died during the surgery were excluded from the study.

The groups of patients divided in terms of the death cause and histological type (subtype) of the mammary tumour were statistically assessed using χ^2 test. The differences at the level of $p < 0.05$ were assessed as significant, $p < 0.001$ as highly significant.

Results

Survival periods of females depending on the histological type and subtype of tumour are provided in Table 2. In our group of 221 patients, 164 (74.2%) mammary malignant tumours and 39 (17.7%) benign mammary tumours were diagnosed, and 18 (8.1%) samples were evaluated as hyperplasia. The latter are not classified as neoplasia, however, since neoplasm cannot be differentiated from hyperplasia until histological examination has been made, we also included these patients in the group based on clinical evaluation of incidence frequency and survival. The average age of females with malignant tumours was 10.1 years (5-14.5), of those with benign tumours 8.9 years (3.5-13) and those with hyperplasia 8.5 years (3-13).

Table 2. Incidence of individual types (subtypes) of mammary tumours and average survival time in the group of 221 patients

Tumour type/subtype	Age	Survival	Death within 2 years		Total	
	Years	Months	(n)	%	(n)	%
Malignant			81	49.4	164	74.2
Noninvasive carcinoma						
papillary	10	36.4	10	35.7	28	12.67
tubular	10.3	37.4	3	25	12	5.43
Invasive carcinoma						
complex	10.7	16.1	16	80	20	9.05
papillary	10.1	30.8	11	55	20	9.05
tubular	9.9	32.1	19	41.3	46	20.81
solid	9.3	18.6	11	64.7	17	7.69
anaplastic	0	0	0	0	0	0
special	11.2	30.4	3	42.9	7	3.17
Sarcoma	9	12	1	100	1	0.45
Carcinosarcoma	10.7	29.1	7	53.8	13	5.88
Benign			12	30.7	39	17.7
adenoma	8.2	59.3	1	11.1	9	4.07
ibroadenoma	8.9	39.1	10	43.5	23	10.41
mixed	9.7	41.1	1	14.3	7	3.17
Hyperplasia	8.5	50.2	2	11.1	18	8.1
Total			95	43	221	100

In the patient group with malignant tumours, a non-invasive papillary carcinoma was diagnosed in 28 females (12.67%) with an average survival length of 36.4 months, a non-invasive tubular carcinoma in 12 females (5.43%) with an average patient survival length of 37.4 months. The rest of the mammary malignant tumours were evaluated as invasive, with a complex carcinoma diagnosed in 20 females (9.05%) and affected individuals' survival length of 16.1 months; papillary carcinoma in 20 females (9.05%) with an average patient survival length of 30.8 months; tubular carcinoma in 46 females (20.81%) with

an average patient survival length of 32.1 months. A solid carcinoma with 18.6 months' average survival was proved in 17 females (7.69%), a special type of carcinoma with 30.4 months average survival was diagnosed in 7 females (3.17%), a sarcoma in 1 female dog (0.45%) with 12 months' survival, and a carcinosarcoma was described in 13 females (5.88%) with 29.1 months' average survival. An anaplastic carcinoma was not diagnosed in any of the included females.

As to benign tumours, an adenoma was diagnosed in 9 females (4.07%) with a 59.3-month survival, a fibroadenoma in 23 females (10.41%) with a 39.1-month survival, and a mixed benign tumour in 7 females (3.17%) with a 41.1-month survival. Mammary hyperplasia was diagnosed in 18 females (8.1%) with a 50.2-month survival length.

The shortest survival was recorded in 1 female dog with a histologically diagnosed sarcoma. The shortest survival was further recorded in the groups with a complex carcinoma (16.1 months) and solid carcinoma (18.6 months). The above mentioned values are significant ($p < 0.05$), as distinct from survival periods in the other groups of malignant tumours. Survival periods of patients in the other groups with malignant tumours ranged from 29.1 to 37.4 months; the differences between these groups were not significant. Survival periods of females in the benign tumour groups ranged from 39.1 to 59.3 months, and the differences between the groups were not significant. The difference in survival periods between the benign tumours groups and complex and solid carcinomas groups was significant ($p < 0.01$). No significant difference was found in the length of survival in the benign tumour groups and other groups with malignant tumours.

Death causes in the monitored patient group are shown in Table 3.

Of 164 patients with malignant tumours in direct relation to mammary tumours, i.e. due

Table 3. Causes of deaths following surgical treatment of mammary gland tumour in the group of 221 patients

Malignant	Mam.tumour	Other illness	Age	Unknown	Alive	Total
	n (%)	n (%)	n (%)	n (%)	n (%)	
Noninvasive carcinoma						
papillary	2 (7)	12 (42.9)	4 (14.3)	6 (21.4)	4 (14.3)	28
tubular	0	4 (33.3)	3 (25)	0	5 (41.7)	12
Invasive carcinoma						
complex	7 (35)	9 (45)	1 (5)	2 (10)	1 (5)	20
papillary	9 (45)	8 (40)	1 (5)	1 (5)	1 (5)	20
tubular	11 (23.9)	21 (45.7)	4 (8.7)	5 (10.9)	5 (10.9)	46
solid	5 (29.4)	9 (52.9)	0	3 (17.3)	0	17
anaplastic	0	0	0	0	0	0
special	2 (28.6)	2 (28.6)	3 (42.9)	0	0	7
Sarcoma	1 (100)	0	0	0	0	1
Carcinosarcoma	4 (30.8)	2 (15.4)	5 (38.5)	2 (15.4)	0	13
Total	41 (25)	67 (40.9)	21 (12.8)	19 (11.6)	16 (9.8)	164
Benign						
adenoma	0	6 (66.7)	0	1 (11.1)	2 (22.2)	9
fibroadenoma	0	10 (43.5)	3 (13)	3 (13)	7 (30.4)	23
mixed	0	3 (42.9)	1 (14.3)	0	3 (42.9)	7
Total	0	19 (48.7)	4 (10.2)	4 (10.2)	12 (30.8)	39
Hyperplasia	2 (11.1)	8 (44.4)	2 (11.1)	1 (5.6)	5 (27.8)	18

to metastases or relapses, 41 females (25%) died or were put down within an average of 19 months from surgery. In the non-invasive papillary carcinoma group, 2 females (7%) died or were put down as a result of mammary tumour; no death was recorded in the group with non-invasive tubular carcinoma. In the complex carcinoma group 7 females (35%) died, 9 females (45%) died in the invasive papillary carcinoma group, 11 females (23.9%) in the invasive tubular carcinoma group, 5 females (29.4%) in the solid carcinoma group and 2 females (28.6%) died in the special carcinoma group. One patient with a sarcoma (n = 1) died after surgery. In the carcinosarcoma group 4 females (30.8%) died as a result of mammary tumour.

In the benign tumours group (n = 39) no females died due to mammary tumour, in the hyperplasia group 2 females died (11.1%) within 42 months. A significant difference ($p < 0.001$) was found between death-rates of females after mammary tumour surgery, namely between those with malignant and those with benign tumours, or between those with malignant tumours and those with mammary hyperplasia.

A different illness as the main cause of death of euthanasia was identified in the groups of patients with a non-invasive papillary carcinoma (42.9%), non-invasive tubular carcinoma (33.3%), complex carcinoma (45%), invasive tubular carcinoma (45.7%), solid carcinoma (52.9%), adenoma (66.7%), fibroadenoma (43.5%), with a mixed benign tumour (42.9%) and with hyperplasia (44%). No significant differences were proved in patient death-rates due to a different illness when affected by the malignant or benign tumours, or hyperplasia.

The main cause of death in the groups of special carcinoma (42% of females) and carcinosarcoma (39% females) was old age. The largest number of living females at the conclusion of the study, i.e. minimum of 4 years after the surgery, was in the patient groups with a mixed benign tumour (43%) and a non-invasive tubular carcinoma (42%). No significant difference was found, however, between the death-rates of patients dying of old age and the groups with malignant or benign tumours.

Discussion

Information on the incidence of mammary tumours in groups (according to WHO) of malignant tumours, benign tumours and hyperplasias in the literature varies. The closest to our data (74.2% malignant, 17.6% benign and 8.1% hyperplasias) is the study of Hellmén et al. (1993), who report 68% malignant, 30% benign and 2% hyperplasias. Stratman et al. (2008) arrived at similar conclusions, reporting 74% malignant and 26% benign tumours. Bauman et al. (2004) report 71% mammary malignant tumours in a group of 136 females. The results comparable with ours are also presented by Milanta et al. (2005), namely 76.4% malignant and 23.6% benign tumours. In contrast, the results of some other authors' studies give different incidences of mammary malignant tumours, e.g. 36% (Morris et al. 1998), 30-40% malignant (Misdorp 1999), 40-50% malignant (Sorenmo 2003; Robbins 2003) and 56% malignant tumours (Qiu et al. 2008).

The patient group with non-invasive carcinomas included 40 females (18.1%), of which 28 females (12.67%) had non-invasive papillary and 12 females (5.43%) non-invasive tubular carcinomas. The division of non-invasive carcinomas, i.e. carcinomas *in situ* into papillary and tubular ones is not widely used, and we have chosen to use it in order to identify possible differences between the patients with regard to survival length and death causes.

In the patient group with invasive carcinomas we identified 9.05% complex and 9.05% papillary, 20.81% tubular, 7.69% solid and 3.17% special tumours, 0.45% sarcomas and 5.88% carcinosarcomas. Anaplastic carcinoma has not been identified in our patient group. Sorenmo et al. (2000) report the tubular carcinoma as the most frequent type of malignant

mammary tumour. They describe the incidence of 68% tubular, 21.6% solid, 8% anaplastic and 1.8% other mammary malignant tumours. They mention sarcoma as a very rare canine mammary gland tumour. Morris et al. (1999) describe carcinoma *in situ* in 6.3% cases, papillary carcinoma in 6.3% cases, tubular carcinoma in 18.8% cases, solid carcinoma in 59.4% cases, anaplastic carcinoma in 6.3% cases and special carcinoma type in 3.1% cases. Milanta et al. (2005) describe carcinomas *in situ* in 11.1%, complex carcinoma in 52.7%, solid carcinoma in 11.1% cases and the remaining 25.1% constitute other types of invasive carcinomas. Robbins (2003) reports without closer specification that solid carcinoma, tubular adenocarcinoma, papillary adenocarcinoma, and anaplastic carcinoma are the most widespread types of malignant tumours. He recorded sarcoma incidence in 10% of malignant tumours. Similar percentages of mammary malignant tumours are also presented by Qiu et al. (2008), namely 28.6% cases of tubular papillary tumours, 39% solid tumours, 10.7% cases of sarcomas, and 10.7% cases of special carcinomas and 7% carcinosarcomas.

The patients in our study were divided into groups and subgroups based on the WHO classification of mammary tumours according to Misdorp et al. (1999). The comparison of tumour occurrences in the individual groups and subgroups with those of other authors is problematic, because some authors used an older WHO classification applying a different method of division into groups (Hellmén et al. 1993), or they used an entirely different division (Stratman et al. 2008), or they did not cover, due to a smaller number of followed patients, all the types and subtypes of mammary tumours (Morris et al. 1999).

The shortest survival period in our study, 12 months, was recorded in the group of a patient with sarcoma. As there was only one clinical case included in our group, the result cannot be statistically evaluated. Robbins (2003) reports survival of 90 days after surgery for sarcoma, Sorenmo (2003) describes a generally unfavourable prognosis for patients with a sarcoma. In the complex and solid carcinoma groups, the average survival periods of our patients were 16.1 and 18.6 months, while the average survival periods in all the other malignant tumour groups ranged from 29.1 to 37.4 months (see Table 2). Comparison with the other studies' results can only be made on a general basis, because so far no one has monitored the survival of patients after the mammary gland surgery in relation to detailed division into individual subtypes. Misdorp et al. (1999) stated that 25-40% of females with malignant tumours survive 2 years after surgery. However, exact death causes are not specified. In our patient group (Table 2), 49.4% females with malignant tumours died within 2 years following surgery, but at the same time 43.5% females with fibroadenoma also died, which would indicate the same prognosis. Similarly, the finding of Misdorp et al. (1999) that carcinosarcoma has a very unfavourable prognosis and females die within 1 year as a result of metastases, does not agree with our results. In our study, 30% females died over 28 months due to metastases and relapses, with an average 29-month survival period.

Morrison (1998) specifies 24.6 months as the length of survival of females with tubular carcinoma, and 6.5 months of females with solid carcinoma, which is less than that of patients in our group, though it is consistent with our finding of longer survivals of patients with tubular carcinoma compared with patients with solid carcinoma. Morrison (1998) did not follow the length of survival relating to other types of malignant tumours. Owen (1979) generally reports an unfavourable prognosis after mastectomy for invasive tubular adenocarcinoma and solid carcinoma. In our patient group the survival periods of females after the solid carcinoma surgery were shorter than in most other groups, still only 29% females died as a result of mammary tumour. As for the invasive tubular carcinoma, the total survival period after surgery was the same as in the other groups of mammary tumours and only 23.9% females died as a result of tumour.

When following the survival time in females after surgical removal of mammary tumours,

objective results can be achieved through simultaneous evaluation of death causes. Within our study, 2 patients (7%) died as a result of mammary tumour in the non-invasive papillary carcinoma group, and none in the non-invasive tubular carcinoma group. This result, however, cannot be statistically evaluated due to the number of patients specified in the groups.

In evaluation of the survival after surgical removal of the mammary tumour and the death causes, our results come closest to the findings of the study of Hellmén et al. (1993). In this study of 73 female dogs with a benign mammary gland tumour, none of them died as a result of the tumour, similarly to our group where 39 females were alive at the end of the study. Of the group of 117 females with different types of carcinoma, 35 females (29%) died as a result of tumour and 26 patients (22%) were alive when the study finished in the Hellmén et al. (1993) study, while in our patient group with malignant tumours 25% died and 9.8% were alive. A more detailed comparison of our results with the mentioned study in not possible as Hellmén et al. (1993) used a different carcinoma classification.

Sorenmo et al. (2000) reported that 2 years after the malignant tumour surgery, 47% females had died or had been put down due to relapses or metastases. In our study, within 4 years as a minimum after the malignant neoplasia surgery, 25% females had died of the same cause within an average period of 16 months, and 9.8% females still lived at that time. Morris et al. (1998) report in the survival evaluation after surgical interventions in relation to mammary tumours 60% females dead after surgery of invasive carcinoma types and 24% females dead within 2 years after surgery of non-invasive carcinomas due to local relapses, metastases in the lungs or both of these causes.

Surprising in our results is the cause of death in 2 females (11%) within 42 months after surgery in the group of mammary gland hyperplasia, since metastases or relapses as the cause of death had not been expected for this group. Relapse occurred in one of them 30 months after surgery, was histologically evaluated as invasive solid carcinoma and 18 months later as a lung metastasis. As for the second patient, 36 months after the mammary gland tumour excision, osteogenic sarcoma and metastasis into the lungs appeared which, however, due to the owner's disapproval were not histologically diagnosed. It is arguable whether, given the long period of time lapsed, malignization of the original mammary hyperplasia and subsequent metastasis was involved, or an entirely different tumour appeared. Bauman et al. (2004) state that as early as the time of diagnosing mammary gland neoplasias there are metastases radiologically detected in 13.5% patients with malignant tumours and 2.5% patients with benign tumours. In females, breast hyperplasia is considered as a risk-involving finding with regard to subsequent development of invasive carcinoma (Tsubura et al. 2007).

With respect to the assessment of survival periods of dogs with mammary gland neoplasias and their death causes after mammary tumour surgical treatment, the biological life expectancy varying for different breeds plays a role. The average life expectancy is 7-8 years in larger dogs and 9-10 years in small dogs. The mean age at death is 10 years in most breeds, 7 in molosoid breeds, up to 12 years in poodles and dachshunds, 11 years in mongrels (Egenvall 2000; 2005).

In our study, the survival time after surgery for malignant (16-37 months) and benign (39-59 months) mammary tumours and mammary gland hyperplasias (50 months) approached the physiological life expectancy. A study exploring longevity and death causes in the canine population states old age as the cause of death in 20.8% cases, a tumour in general in 14.5% cases, and other illnesses constitute the rest of the death causes (Proschowsky et al. 2003; Egenvall et al. 2005). Fighera et al. (2008) describe that neoplasia and degenerative diseases of organism constitute death causes in 50% of old dogs. In our study comprising 221 patients with mammary gland tumours, old age was the cause of death in 14.4% of the studied individuals (27 females of the total number of 188 dead). The mammary gland neoplasia regardless of the kind of tumour was the cause of death in 43 cases (22.9%).

It follows from the above comparison that mammary tumours following surgical treatment do not significantly affect biological longevity. We assume that a large number of patients after the mammary tumour surgery die of other illnesses, or naturally as a result of old age earlier than possible development of metastases with their clinical evidence may take place.

In our group of 221 patients with mammary gland tumours we identified 74% malignant and 17.6% benign tumours and 8.1% cases of mammary gland hyperplasias.

An invasive tubular carcinoma was identified as the most widespread type of mammary malignant tumours, and fibroadenoma as the most widespread type of benign mammary tumour. The shortest survival period after mammary tumour surgery was recorded in a female dog with a sarcoma, solid and complex carcinoma. The longest survival periods were recorded in females with mammary gland adenomas. The least favourable prognosis for patients with mammary tumours linking the death cause with the mammary tumour involved those with the invasive papillary carcinoma. The most favourable prognosis of illness was for patients with benign tumours and non-invasive tubular carcinoma. A frequent cause of death in females with mammary gland tumours was a different illness unrelated to mammary tumours.

Doba přežívání pacientů a příčiny jejich úhynu po chirurgickém ošetření tumorů mléčné žlázy v závislosti na histologickém typu tumoru: retrospektivní studie 221 případů

V této retrospektivní studii byl hodnocen soubor pacientů, operovaných pro neoplazii mléčné žlázy (221 fena). Po chirurgickém ošetření byly feny zařazeny podle histologických nálezů do skupin a podskupin podle WHO systému. V jednotlivých skupinách a podskupinách byla sledována délka jejich přežívání po operaci tumoru mléčné žlázy a příčiny smrti. Z celkového počtu bylo 164 tumorů maligních, 39 bylo benigních a 18 byly hyperplazie mléčné žlázy. V případě maligních tumorů byl nejčastěji prokázán invazivní tubulární karcinom (20,81 %), v případě benigních tumorů pak fibroadenom (10,41 %). Délka přežívání u fen s maligními nádory se pohybovala v rozmezí od 12 - 37,4 měsíce v závislosti na histologickém podtypu. U fen s benigními novotvary mléčné žlázy byla délka přežívání 39,1- 59,3 měsíce a u zvířat s hyperplazií byla 50,2 měsíce. Z důvodu tumoru mléčné žlázy uhynula ve skupině s maligními nádory 41 fena (25%), ve skupině s benigními tumory neuhynula žádná a ve skupině s hyperplazií uhynuly 2 feny (11,1%).

Na základě výsledků této studie lze konstatovat, že doba přežívání chirurgicky léčených pacientů s tumory mléčné žlázy je statisticky významně kratší u solidních a komplexních karcinomů v porovnání s pacienty postiženými ostatními sledovanými histologickými podtypy. Nejdelší doba přežívání po operaci byla zaznamenána u skupiny s adenomem. Nejméně příznivá prognóza onemocnění pro pacienty s tumory mléčné žlázy z hlediska souvislosti příčiny úmrtí v důsledku tumoru mléčné žlázy měli pacienti s invazivním papilárním karcinomem. Nejpříznivější prognózu onemocnění měli pacienti s tumory benigními a neinvazivním tubulárním karcinomem. Častou příčinou úmrtí u fen s tumory mléčné žlázy bylo jiné onemocnění nesouvisející s tumory mléčné žlázy.

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