

## 乳腺腫瘍の組織分類について

マルピー・ライフテック(以下 MLT)では 1993 年の病理検査業務開始時点から乳腺腫瘍の組織分類に関しては Dr. Narama の提唱された分類を使用してきましたが、このたび 2017 年に発行された *Tumors in Domestic Animals, 5<sup>th</sup> ed* に記載されている組織分類 (TDA5) を使用する事にいたしました。

### 犬猫(動物)の腫瘍組織分類の変遷

動物腫瘍の組織分類は 1974 年に WHO(Word Health Organization、世界保健機構)から出版<sup>1)</sup>され、その後長い間、新しい分類は提唱されませんでした。MLT 開設時には WHO 分類以外に 1990 年に出版<sup>2)</sup>された *Tumors in Domestic Animals, 3<sup>rd</sup> ed* に記載されている物のみでした。WHO の分類は現実にそぐわない部分が多く使い難く、1990 年に出版された分類はそれを補う物でした。Dr. Narama の分類<sup>3)</sup>はそれを使いやすい形にまとめた物でした。

その後、1999 年に第二版の WHO 組織分類<sup>4)</sup>、2002 年に *Tumors in Domestic Animals, 4<sup>th</sup> ed* が出版<sup>5)</sup>され、過去の分類と内容が大きく変わりました。さらに、犬を中心に乳腺腫瘍に関する研究が数多く行われ、2011 年に Dr. Goldschmidt らが新しい分類<sup>6)</sup>を提唱され、その後の種々の研究を取り入れて作られた最新の分類が TDA5<sup>7)</sup>です。

### TDA5 を使用するにあたって

全ての腫瘍の組織分類とも多くの細分類を持っていますが、実際には細分類を明確に適応できる場合は限られます。TDA5 の乳腺癌-単純型にも管状、管状乳頭状、嚢胞乳頭状、篩状と 4 つの細分類がありますが、実際の症例ではそれらの細分類に相当する組織像が混在することや、どれにも当てはまらないような形態を取ることが多々あります。そのため、細分類を使用する場合は、標本上

の多くの領域が細分類に相当する場合のみに限り、それ以外の場合には細分類を明記しない運用とし(前例の場合は、乳腺癌-単純型、のみ記載)、細分類に相当する事項はコメントとして記載します。細分類には相当しませんが、乳腺癌の分類型に関しても同じ扱いとし、明確な型の分類が出来ない場合は、乳腺癌、のみの記載とします。

TDA5 には乳腺に発生する肉腫(悪性間葉系腫瘍)として、骨肉腫・軟骨肉腫・線維肉腫・血管肉腫・その他の肉腫、が記述されています。乳腺に発生する悪性間葉系腫瘍の多くは分化が不明瞭で、その他の肉腫、に相当する物が多いため、悪性間葉系腫瘍に関しては人の乳腺癌取扱い規約<sup>8)</sup>に準じて間質肉腫(乳腺間質肉腫)と総称し、分化の方向はコメントとして記載することにします。

STS では従来 WHO 分類を使用していましたが今回合わせて TDA5 を使用する事に致します。

腫瘍の分類は症例の蓄積や学術的検索方法の進歩によって時代とともに変わって行く物で、現在使っている物が完全という事はありません。分類に一致しない組織像の腫瘍が発生する事があり、その場合にはヒトの分類などを流用して診断名を記述する事があります。

2017 年 10 月  
マルピー・ライフテック  
野村耕二

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#### 参考資料

1. TDA5 分類表、犬 2 頁、猫 1 頁
2. TDA5 分類から MLT 分類への変換表、2 頁
3. MLT 分類から TDA5 分類への変換表、2 頁
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5. WHO2nd 分類から TDA5 分類の変換表、2 頁

英名	訳語	実際に使用する診断名
1. Hyperplasia/dysplasia	過形成／異型性	過形成／異型性
Duct ectasia	乳管拡張	乳管拡張、duct ectasia
Lobular hyperplasia (adenosis)	小葉過形成(アデノーシス)	小葉過形成(アデノーシス)、lobular hyperplasia (adenosis)
Regular	標準・定常	小葉過形成(アデノーシス)、lobular hyperplasia (adenosis)
With secretory activity	分泌活性を伴う	小葉過形成(アデノーシス)、lobular hyperplasia (adenosis)
With fibrosis	線維化を伴う	小葉過形成(アデノーシス)、lobular hyperplasia (adenosis)
With atypia	異型を伴う	小葉過形成(アデノーシス)、lobular hyperplasia (adenosis)
Epitheliosis	上皮症	上皮症、epitheliosis
Papillomatosis	乳頭腫症	乳頭腫症、papillomatosis
Fibroadenomatous change	線維腺腫様変化	線維腺腫様変化、fibroadenomatous change
Gynecomastia	雌性化乳房	雌性化乳房、gynecomastia
2. Benign neoplasms	良性腫瘍	良性腫瘍
Adenoma-simple	乳腺腫-単純型	乳腺腫-単純型、mammary adenoma-simple
Intraductal papillary adenoma	乳管内乳頭状腺腫	乳管内乳頭状腺腫、intraductal papillary adenoma
Ductal adenoma	乳管腺腫	乳管腺腫、mammary ductal adenoma
Ductal adenoma with squamous differentiation	扁平上皮化生を伴う乳管腺腫	乳管腺腫、mammary ductal adenoma
Fibroadenoma	線維腺腫	乳腺線維腺腫、mammary fibroadenoma
Myoepithelioma	筋上皮腫	乳腺良性筋上皮腫、benign myoepithelioma of mammary gland
Complex adenoma (adenomyoepithelioma)	複合腺腫(腺筋上皮腫)	複合乳腺腫(腺筋上皮腫)、complex adenoma of mammary gland (adenomyoepithelioma)
Benign mixed tumor	良性混合腫瘍	乳腺良性混合腫瘍、benign mixed tumor of mammary gland
3. Malignant epithelial neoplasms	悪性上皮性腫瘍	悪性上皮性腫瘍
Carcinoma - in situ	上皮内癌	乳腺上皮内癌、in situ carcinoma of mammary gland
Carcinoma - simple	乳腺癌-単純型	乳腺癌-単純型、carcinoma-simple of mammary gland
a. tubular	管状	乳腺癌-単純型、carcinoma-simple of mammary gland(管状 <sup>※</sup> )
b. tubulopapillary	管状乳頭状	乳腺癌-単純型、carcinoma-simple of mammary gland(管状乳頭状 <sup>※</sup> )
c. cystic-papillary	嚢胞乳頭状	乳腺癌-単純型、carcinoma-simple of mammary gland(嚢胞乳頭状 <sup>※</sup> )
d. cribriform	篩状	乳腺癌-単純型、carcinoma-simple of mammary gland(篩状 <sup>※</sup> )
Carcinoma - micropapillary invasive	乳腺癌-微小乳頭浸潤型	乳腺癌、carcinoma of mammary gland(微小乳頭浸潤型 <sup>※</sup> )
Carcinoma - solid	乳腺癌-充実型	乳腺癌、carcinoma of mammary gland(充実型 <sup>※</sup> )
Comedocarcinoma	面皰癌	乳腺癌、carcinoma of mammary gland(面皰癌 <sup>※</sup> )
Carcinoma - anaplastic	乳腺癌-退形成型	乳腺癌、carcinoma of mammary gland(退形成型 <sup>※</sup> )
Carcinoma arising in a complex adenoma/mixed tumor	複合腺腫/混合腫瘍から発生した乳腺癌	複合腺腫/混合腫瘍から発生した乳腺癌、carcinoma arising in a complex adenoma/mixed tumor
Carcinoma - complex type	乳腺癌-複合型	乳腺癌-複合型、carcinoma-complex type of mammary gland
Carcinoma and malignant myoepithelioma	乳腺癌と悪性筋上皮腫	乳腺癌と悪性筋上皮腫、carcinoma and malignant myoepithelioma of mammary gland
Carcinoma - mixed type	乳腺癌-混合型	乳腺癌-混合型、carcinoma-mixed type of mammary gland
Ductal carcinoma	乳管癌	乳管癌、ductal carcinoma of mammary gland
Intraductal papillary carcinoma	乳管内乳頭状腺癌	乳管内乳頭状腺癌、intraductal papillary carcinoma of mammary gland

英名	訳語	実際に使用する診断名
4. Malignant epithelial neoplasms - special types	悪性上皮性腫瘍-特殊型	悪性上皮性腫瘍-特殊型
Squamous cell carcinoma	扁平上皮癌	扁平上皮癌、squamous cell carcinoma of mammary gland
Adenosquamous cell carcinoma	腺扁平上皮癌	腺扁平上皮癌、adenosquamous carcinoma of mammary gland
Mucinous carcinoma	粘液癌	粘液癌、mucinous carcinoma of mammary gland
Lipid-rich (secretory) carcinoma	脂質産生(分泌)癌	脂質産生(分泌)癌、lipid-rich (secretory) carcinoma of mammary gland
Spindel cell carcinoma	紡錘細胞癌	紡錘細胞癌、spindle cell carcinoma of mammary gland
Malignant myoepithelioma	悪性筋上皮腫	紡錘細胞癌、spindle cell carcinoma of mammary gland
Squamous cell carcinoma - spindle cell variant	扁平上皮癌-紡錘細胞異形	紡錘細胞癌、spindle cell carcinoma of mammary gland
Carcinoma - spindele cell variant	乳腺癌-紡錘細胞異形	紡錘細胞癌、spindle cell carcinoma of mammary gland
Inflammary carcinoma	炎症性乳癌	炎症性乳癌
5. Malignant mesenchymal neoplasms - sarcomas	悪性間葉性腫瘍-肉腫	乳腺間質肉腫、stromal sarcoma of mammary gland
Osteosarcoma	骨肉腫	乳腺間質肉腫、stromal sarcoma of mammary gland
Chondrosarcoma	軟骨肉腫	乳腺間質肉腫、stromal sarcoma of mammary gland
Fibrosarcoma	線維肉腫	乳腺間質肉腫、stromal sarcoma of mammary gland
Hemangiosarcoma	血管肉腫	乳腺間質肉腫、stromal sarcoma of mammary gland
Other sarcoma	その他の肉腫	乳腺間質肉腫、stromal sarcoma of mammary gland
6. Carcinosarcoma - malignant mixed mammary tumor	癌肉腫-悪性混合乳腺腫瘍	癌肉腫、carcinosarcoma of mammary gland
7. Neoplasms of the nipple	乳頭の腫瘍	乳頭の腫瘍
Neoplasms of the nipple-Adenoma	腺腫	乳頭部腺腫、adenoma of nipple
Neoplasms of the nipple-Carcinoma	腺癌	乳頭部腺癌、carcinoma of nipple
Neoplasms of the nipple-Carcinoma with epidermal infiltration (Paget like disease)	表皮内浸潤を伴う癌(パジェット様疾患)	乳頭部腺癌、carcinoma of nipple
8. Hyperplasia/dysplasia of the nipple	乳頭の過形成/異型性	乳頭の過形成/異型性
Melanosis of the skin of the nipple	乳頭皮膚のメラノーシス	乳頭皮膚のメラノーシス、melanosis of the skin of the nipple

※細分類と型の記載は典型例のみに限る

英名	訳語	実際に使用する診断名
1. Hyperplasia/dysplasia	過形成／異型性	過形成／異型性
Duct ectasia	乳管拡張	乳管拡張、duct ectasia
Lobular hyperplasia (adenosis)	小葉過形成(アデノーシス)	小葉過形成(アデノーシス)、lobular hyperplasia (adenosis)
Regular	標準・定常	小葉過形成(アデノーシス)、lobular hyperplasia (adenosis)
With secretory activity	分泌活性を伴う	小葉過形成(アデノーシス)、lobular hyperplasia (adenosis)
With fibrosis	線維化を伴う	小葉過形成(アデノーシス)、lobular hyperplasia (adenosis)
With atypia	異型を伴う	小葉過形成(アデノーシス)、lobular hyperplasia (adenosis)
Epitheliosis	上皮症	上皮症、epitheliosis
Papillomatosis	乳頭腫症	乳頭腫症、papillomatosis
Fibroadenomatous change	線維腺腫様変化	線維腺腫様変化、fibroadenomatous change
Gynecomastia	雌性化乳房	雌性化乳房、gynecomastia
2. Benign neoplasms	良性腫瘍	良性腫瘍
Adenoma-simple	乳腺腫-単純型	乳腺腫-単純型、mammary adenoma-simple
Intraductal papillary adenoma	乳管内乳頭状腺腫	乳管内乳頭状腺腫、intraductal papillary adenoma
Ductal adenoma	乳管腺腫	乳管腺腫、mammary ductal adenoma
Fibroadenoma	線維腺腫	線維腺腫、mammary fibroadenoma
3. Malignant epithelial neoplasms	悪性上皮性腫瘍	悪性上皮性腫瘍
Carcinoma - in situ	上皮内癌	乳腺上皮内癌、in situ carcinoma of mammary gland
Carcinoma - simple	乳腺癌-単純型	乳腺癌-単純型、carcinoma-simple of mammary gland
a. tubular	管状	乳腺癌-単純型、carcinoma-simple of mammary gland(管状 <sup>※</sup> )
b. tubulopapillary	管状乳頭状	乳腺癌-単純型、carcinoma-simple of mammary gland(管状乳頭状 <sup>※</sup> )
c. cystic-papillary	嚢胞乳頭状	乳腺癌-単純型、carcinoma-simple of mammary gland(嚢胞乳頭状 <sup>※</sup> )
d. cribriform	篩状	乳腺癌-単純型、carcinoma-simple of mammary gland(篩状 <sup>※</sup> )
Carcinoma - micropapillary invasive	乳腺癌-微小乳頭浸潤型	乳腺癌、carcinoma of mammary gland(微小乳頭浸潤型 <sup>※</sup> )
Carcinoma - solid	乳腺癌-充実型	乳腺癌、carcinoma of mammary gland(充実型 <sup>※</sup> )
Comedocarcinoma	面皰癌	乳腺癌、carcinoma of mammary gland(面皰癌 <sup>※</sup> )
Carcinoma - anaplastic	乳腺癌-退形成型	乳腺癌、carcinoma of mammary gland(退形成型 <sup>※</sup> )
Intraductal papillary carcinoma	乳管内乳頭状腺癌	乳管内乳頭状腺癌、intraductal papillary carcinoma of mammary gland
Ductal carcinoma	乳管癌	乳管癌、ductal carcinoma of mammary gland
4. Malignant epithelial neoplasms - special types	悪性上皮性腫瘍-特殊型	悪性上皮性腫瘍-特殊型
Squamous cell carcinoma	扁平上皮癌	扁平上皮癌、squamous cell carcinoma of mammary gland
Adenosquamous cell carcinoma	腺扁平上皮癌	腺扁平上皮癌、adenosquamous carcinoma of mammary gland
Mucinous carcinoma	粘液癌	粘液癌、mucinous carcinoma of mammary gland
Lipid-rich (secretory) carcinoma	脂質産生(分泌)癌	脂質産生(分泌)癌、lipid-rich (secretory) carcinoma of mammary gland
Spindel cell carcinoma	紡錘形細胞癌	紡錘形細胞癌、spindle cell carcinoma of mammary gland
Squamous cell carcinoma - spindle cell variant	扁平上皮癌-紡錘細胞異形	紡錘形細胞癌、spindle cell carcinoma of mammary gland
Carcinoma - spindel cell variant	乳腺癌-紡錘細胞異形	紡錘形細胞癌、spindle cell carcinoma of mammary gland
Inflammary carcinoma	炎症性乳癌	炎症性乳癌
5. Malignant mesenchymal neoplasms - sarcomas	悪性間葉性腫瘍-肉腫	乳腺間質肉腫、stromal sarcoma of mammary gland
Fibrosarcoma	線維肉腫	乳腺間質肉腫、stromal sarcoma of mammary gland
Other sarcoma	その他の肉腫	乳腺間質肉腫、stromal sarcoma of mammary gland

<sup>※</sup>細分類と型の記載は典型例のみに限る

## Histological Classification of Mammary Tumors of the Dog

Tumors of Domestic Animals	MLT分類
1. Hyperplasia/dysplasia	過形成
Duct ectasia	乳管拡張、duct ectasia
Lobular hyperplasia (adenosis)	アデノーシス、adenosis
Regular	アデノーシス、adenosis
With secretory activity	アデノーシス、adenosis
With fibrosis	アデノーシス、adenosis
With atypia	アデノーシス、adenosis
Epitheliosis	乳管上皮過形成、ductal hyperplasia
Papillomatosis	乳管上皮過形成、ductal hyperplasia
Fibroadenomatous change	乳腺症、mastopathy
Gynecomastia	雌性化乳房、gynecomastia
2. Benign neoplasms	良性腫瘍
Adenoma-simple	乳腺腫、mammary adenoma
Intraductal papillary adenoma	乳腺腫、mammary adenoma
Ductal adenoma	乳腺腫、mammary adenoma
Ductal adenoma with squamous differentiation	乳腺腫、mammary adenoma
Fibroadenoma	乳腺線維腺腫、mammary fibroadenoma
Myoepithelioma	乳腺良性筋上皮腫、benign myoepithelioma of mammary gland
Complex adenoma (adenomyoepithelioma)	乳腺良性混合腫瘍、benign mixed tumor of mammary gland
Benign mixed tumor	乳腺良性混合腫瘍、benign mixed tumor of mammary gland
3. Malignant epithelial neoplasms	悪性上皮性腫瘍
Carcinoma - in situ	乳腺癌、mammary adenocarcinoma
Carcinoma - simple	乳腺癌、mammary adenocarcinoma
Carcinoma - simple a. tubular	乳腺癌、mammary adenocarcinoma
Carcinoma - simple b. tubulopapillary	乳腺癌、mammary adenocarcinoma
Carcinoma - simple c. cystic-papillary	乳腺癌、mammary adenocarcinoma
Carcinoma - simple d. cribriform	乳腺癌、mammary adenocarcinoma
Carcinoma - micropapillary invasive	乳腺癌、mammary adenocarcinoma
Carcinoma - solid	乳腺癌、mammary adenocarcinoma
Comedocarcinoma	乳腺癌、mammary adenocarcinoma
Carcinoma - anaplastic	乳腺癌、mammary adenocarcinoma
Carcinoma arising in a complex adenoma/mixed tumor	乳腺悪性混合腫瘍、malignant mixed tumor of mammary gland
Carcinoma - complex type	乳腺悪性混合腫瘍、malignant mixed tumor of mammary gland
Carcinoma and malignant myoepithelioma	乳腺悪性混合腫瘍、malignant mixed tumor of mammary gland
Carcinoma - mixed type	乳腺悪性混合腫瘍、malignant mixed tumor of mammary gland
Ductal carcinoma	乳管癌、ductal carcinoma of mammary gland
Intraductal papillary carcinoma	乳管内乳頭状腺癌、intraductal papillary carcinoma of mammary gland
4. Malignant epithelial neoplasms - special types	悪性上皮性腫瘍-特殊型
Squamous cell carcinoma	扁平上皮癌、squamous cell carcinoma of mammary gland
Adenosquamous cell carcinoma	扁平上皮癌、squamous cell carcinoma of mammary gland
Mucinous carcinoma	粘液癌、mucinous carcinoma
Lipid-rich (secretory) carcinoma	脂質産生癌、lipid-rich carcinoma
Spindel cell carcinoma	紡錘細胞癌、spindle cell carcinoma
Malignant myoepithelioma	悪性筋上皮腫、malignant myoepithelioma of mammary gland
Squamous cell carcinoma - spindle cell variant	紡錘細胞癌
Carcinoma - spindele cell variant	紡錘細胞癌
Inflammatory carcinoma	乳腺癌、mammary adenocarcinoma
5. Malignant mesenchymal neoplasms - sarcomas	悪性間葉系腫瘍-肉腫
Osteosarcoma	悪性筋上皮腫、malignant myoepithelioma of mammary gland
Chondrosarcoma	悪性筋上皮腫、malignant myoepithelioma of mammary gland
Fibrosarcoma	悪性筋上皮腫、malignant myoepithelioma of mammary gland
Hemangiosarcoma	血管肉腫、hemangiosarcoma
Other sarcoma	悪性筋上皮腫、malignant myoepithelioma of mammary gland
6. Carcinosarcoma - malignant mixed mammary tumor	癌肉腫、carcinosarcoma
7. Neoplasms of the nipple	乳頭の腫瘍
Neoplasms of the nipple-Adenoma	乳腺腫、mammary adenoma
Neoplasms of the nipple-Carcinoma	乳腺癌、mammary adenocarcinoma
Neoplasms of the nipple-Carcinoma with epidermal infiltration (Paget like disease)	乳腺癌、mammary adenocarcinoma
8. Hyperplasia/dysplasia of the nipple	
Melanosis of the skin of the nipple	

## Histological Classification of Mammary Tumors of the Cat

Tumors of Domestic Animals	MLT分類
1. Hyperplasia/dysplasia	過形成
Duct ectasia	乳管拡張、duct ectasia
Lobular hyperplasia (adenosis)	アデノーシス、adenosis
Regular	アデノーシス、adenosis
With secretory activity	アデノーシス、adenosis
With fibrosis	アデノーシス、adenosis
With atypia	アデノーシス、adenosis
Epitheliosis	乳管上皮過形成、ductal hyperplasia
Papillomatosis	乳管上皮過形成、ductal hyperplasia
Fibroadenomatous change	線維腺腫様変化、fibroadenomatous change
Gynecomastia	雌性化乳房、gynecomastia
2. Benign neoplasms	良性腫瘍
Adenoma-simple	乳腺腫、mammary adenoma
Intraductal papillary adenoma	乳腺腫、mammary adenoma
Ductal adenoma	乳腺腫、mammary adenoma
Fibroadenoma	線維腺腫、mammary fibroadenoma
3. Malignant epithelial neoplasms	悪性上皮性腫瘍
Carcinoma - in situ	乳腺癌、mammary adenocarcinoma
Carcinoma - simple	乳腺癌、mammary adenocarcinoma
Carcinoma - simple a. tubular	乳腺癌、mammary adenocarcinoma
Carcinoma - simple b. tubulopapillary	乳腺癌、mammary adenocarcinoma
Carcinoma - simple c. cystic-papillary	乳腺癌、mammary adenocarcinoma
Carcinoma - simple d. cribriform	乳腺癌、mammary adenocarcinoma
Carcinoma - micropapillary invasive	乳腺癌、mammary adenocarcinoma
Carcinoma - solid	乳腺癌、mammary adenocarcinoma
Comedocarcinoma	乳腺癌、mammary adenocarcinoma
Carcinoma - anaplastic	乳腺癌、mammary adenocarcinoma
Intraductal papillary carcinoma	乳管内乳頭状腺癌、intraductal papillary carcinoma of mammary gland
Ductal carcinoma	乳管癌、ductal carcinoma of mammary gland
4. Malignant epithelial neoplasms - special types	悪性上皮性腫瘍-特殊型
Squamous cell carcinoma	扁平上皮癌、squamous cell carcinoma of mammary gland
Adenosquamous cell carcinoma	扁平上皮癌、squamous cell carcinoma of mammary gland
Mucinous carcinoma	粘液癌、mucinous carcinoma
Lipid-rich (secretory) carcinoma	脂質産生癌、lipid-rich carcinoma
Spindel cell carcinoma	紡錘細胞癌、spindle cell carcinoma
Squamous cell carcinoma - spindle cell variant	紡錘細胞癌、spindle cell carcinoma
Carcinoma - spindele cell variant	紡錘細胞癌、spindle cell carcinoma
Inflammatory carcinoma	乳腺癌、mammary adenocarcinoma
5. Malignant mesenchymal neoplasms - sarcomas	悪性間葉系腫瘍-肉腫
Fibrosarcoma	線維肉腫
Other sarcoma	悪性筋上皮腫、malignant myoepithelioma of mammary gland

## Histological Classification of Mammary Tumors of the Dog

MLT分類	Tumors of Domestic Animals
<b>過形成</b>	<b>1. Hyperplasia/dysplasia</b>
アデノーシス、adenosis	Lobular hyperplasia (adenosis) Regular With secretory activity With fibrosis With atypia
雌性化乳房、gynecomastia	Gynecomastia
乳管拡張、duct ectasia	Duct ectasia
乳管上皮過形成、ductal hyperplasia	Epitheliosis Papillomatosis
乳腺症、mastopathy	Fibroadenomatous change
<b>良性腫瘍</b>	<b>2. Benign neoplasms</b>
乳腺腫、mammary adenoma	Adenoma-simple Intraductal papillary adenoma Ductal adenoma Ductal adenoma with squamous differentiation
乳腺線維腺腫、mammary fibroadenoma	Fibroadenoma
乳腺良性混合腫瘍、benign mixed tumor of mammary gland	Complex adenoma (adenomyoepithelioma) Benign mixed tumor
乳腺良性筋上皮腫、benign myoepithelioma of mammary gland	Myoepithelioma
<b>悪性腫瘍</b>	<b>3. Malignant epithelial neoplasms</b>
乳腺癌、mammary adenocarcinoma	Carcinoma - in situ Carcinoma - simple Carcinoma - simple a. tubular Carcinoma - simple b. tubulopapillary Carcinoma - simple c. cystic-papillary Carcinoma - simple d. cribriform Carcinoma - micropapillary invasive Carcinoma - solid Comedocarcinoma Carcinoma - anaplastic Inflammatory carcinoma Ductal carcinoma
乳管癌、ductal carcinoma of mammary gland	Intraductal papillary carcinoma
乳管内乳頭状腺癌、intraductal papillary carcinoma of mammary gland	Mucinous carcinoma
粘液癌、mucinous carcinoma	Squamous cell carcinoma Adenosquamous cell carcinoma
扁平上皮癌、squamous cell carcinoma of mammary gland	Spindle cell carcinoma Squamous cell carcinoma - spindle cell variant Carcinoma - spindle cell variant
紡錘細胞癌、spindle cell carcinoma	Lipid-rich (secretory) carcinoma
脂質産生癌、lipid-rich carcinoma	Carcinoma arising in a complex adenoma/mixed tumor Carcinoma - complex type Carcinoma and malignant myoepithelioma Carcinoma - mixed type
乳腺悪性混合腫瘍、malignant mixed tumor of mammary gland	Malignant myoepithelioma Osteosarcoma Chondrosarcoma Fibrosarcoma Other sarcoma
悪性筋上皮腫、malignant myoepithelioma of mammary gland	
癌肉腫、carcinosarcoma	<b>6. Carcinosarcoma - malignant mixed mammary tumor</b>



## Histological Classification of Mammary Tumors of the Cat

MLT分類	Tumors of Domestic Animals
過形成	1. Hyperplasia/dysplasia
アデノーシス、adenosis	Lobular hyperplasia (adenosis) Regular With secretory activity With fibrosis With atypia
雌性交乳房、gynecomastia	Gynecomastia
線維腺腫様変化、fibroadenomatous change	Fibroadenomatous change
乳管拡張、duct ectasia	Duct ectasia
乳管上皮過形成、ductal hyperplasia	Epitheliosis Papillomatosis
良性腫瘍	2. Benign neoplasms
乳腺腫、mammary adenoma	Adenoma-simple Intraductal papillary adenoma Ductal adenoma
線維腺腫、mammary fibroadenoma	Fibroadenoma
悪性腫瘍	3. Malignant epithelial neoplasms
乳腺癌、mammary adenocarcinoma	Carcinoma - in situ Carcinoma - simple Carcinoma - simple a. tubular Carcinoma - simple b. tubulopapillary Carcinoma - simple c. cystic-papillary Carcinoma - simple d. cribriform Carcinoma - micropapillary invasive Carcinoma - solid Comedocarcinoma Carcinoma - anaplastic Inflammatory carcinoma
乳管癌、ductal carcinoma of mammary gland	Ductal carcinoma
乳管内乳頭状腺癌、intraductal papillary carcinoma of mammary gland	Intraductal papillary carcinoma
粘液癌、mucinous carcinoma	Mucinous carcinoma
扁平上皮癌、squamous cell carcinoma of mammary gland	Squamous cell carcinoma Adenosquamous cell carcinoma
紡錘細胞癌、spindle cell carcinoma	Spindel cell carcinoma Squamous cell carcinoma - spindle cell variant Carcinoma - spindele cell variant
悪性筋上皮腫、malignant myoepithelioma of mammary gland	Other sarcoma
脂質産生癌、lipid-rich carcinoma	Lipid-rich (secretory) carcinoma
線維肉腫	Fibrosarcoma

## Histologic classification of canine mammary neoplasms

Tumors of Domestic Animals	WHO
1. Hyperplasia/dysplasia	4. Mammary Hyperplasias/Dysplasias
Duct ectasia	4.4. Duct ectasia
Lobular hyperplasia (adenosis)	4.2. Lobular hyperplasia, 4.2.2. Adenosis
Lobular hyperplasia (adenosis)-Regular	4.2. Lobular hyperplasia, 4.2.2. Adenosis
Lobular hyperplasia (adenosis)-With secretory activity	4.2. Lobular hyperplasia, 4.2.2. Adenosis
Lobular hyperplasia (adenosis)-With fibrosis	4.2. Lobular hyperplasia, 4.2.2. Adenosis
Lobular hyperplasia (adenosis)-With atypia	4.2. Lobular hyperplasia, 4.2.2. Adenosis
Epitheliosis	4.1. Ductal hyperplasia, 4.2.1. Epithelial hyperplasia
Papillomatosis	4.1. Ductal hyperplasia, 4.2.1. Epithelial hyperplasia
Fibroadenomatous change	4.2.3. Fibroadenomatous change (feline mammary hypertrophy, fibroepithelial hypertrophy)
Gynecomastia	4.6. Gynecomastia
2. Benign neoplasms	2. Benign Tumors
Adenoma - simple	2.1.1. Simple adenoma
Intraductal papillary adenoma	2.4. Duct papilloma
Ductal adenoma	2.1.3. Basaloid adenoma
Ductal adenoma with squamous differentiation	2.1.3. Basaloid adenoma
Fibroadenoma	2.2. Fibroadenoma
Myoepithelioma	2.1.1. Simple adenoma
Complex adenoma (adenomyoepithelioma)	2.1.2. Complex adenoma
Benign mixed tumor	2.3. Benign mixed tumor
3. Malignant epithelial neoplasms	1. Malignant Tumors
Carcinoma - in situ	1.1. Noninfiltrating (in situ) carcinoma
Carcinoma - simple	1.3. Simple carcinoma
Carcinoma - simple a. tubular	1.3.1. Tubulopapillary carcinoma
Carcinoma - simple b. tubulopapillary	1.3.1. Tubulopapillary carcinoma
Carcinoma - simple c. cystic-papillary	1.3.1. Tubulopapillary carcinoma
Carcinoma - simple d. cribriform	1.3. Simple carcinoma
Carcinoma - micropapillary invasive	1.3. Simple carcinoma
Carcinoma - solid	1.3.2. Solid carcinoma
Comedocarcinoma	1.3. Simple carcinoma
Carcinoma - anaplastic	1.3.3. Anaplastic carcinoma
Carcinoma arising in a complex adenoma/mixed tumor	1.7. Carcinoma or sarcoma in benign tumor
Carcinoma - complex type	1.2. Complex carcinoma
Carcinoma and malignant myoepithelioma	1.2. Complex carcinoma
Carcinoma - mixed type	1.2. Complex carcinoma
Ductal carcinoma	1.3. Simple carcinoma
Intraductal papillary carcinoma	1.3. Simple carcinoma
4. Malignant epithelial neoplasms - special types	1.4. Special types of carcinomas
Squamous cell carcinoma	1.4.2. Squamous cell carcinoma
Adenosquamous carcinoma	1.4.2. Squamous cell carcinoma
Mucinous carcinoma	1.4.3. Mucinous carcinoma
Lipid-rich (secretory) carcinoma	1.4.4. Lipid-rich carcinoma
Spindle cell carcinoma	1.4.1. Spindle cell carcinoma
malignant myoepithelioma	1.4.1. Spindle cell carcinoma
Squamous cell carcinoma - spindle cell variant	1.4.1. Spindle cell carcinoma
Carcinoma - spindle cell variant	1.4.1. Spindle cell carcinoma
Inflammatory carcinoma	
5. Malignant mesenchymal neoplasms - sarcomas	1.5. Sarcoma
Osteosarcoma	1.5.2. Osteosarcoma
Chondrosarcoma	1.5.3. Other sarcomas
Fibrosarcoma	1.5.1. Fibrosarcoma
Hemangiosarcoma	1.5.3. Other sarcomas
Other sarcomas	1.5.3. Other sarcomas
6. Carcinosarcoma - malignant mixed mammary tumor	1.6. Carcinosarcoma
7. Neoplasms of the nipple	
Neoplasms of the nipple-Adenoma	2.1.1. Simple adenoma
Neoplasms of the nipple-Carcinoma	1.3. Simple carcinoma
Neoplasms of the nipple-Carcinoma with epidermal infiltration (Paget like disease)	1.3. Simple carcinoma
8. Hyperplasia/dysplasia of the nipple	
Melanosis of the skin of the nipple	

## Histologic classification of feline mammary neoplasms

Tumors of Domestic Animals	WHO
1. Hyperplasia/dysplasia	4. Mammary Hyperplasias/Dysplasias
Duct ectasia	4.4. Duct ectasia
Lobular hyperplasia (adenosis)	4.2. Lobular hyperplasia, 4.2.2. Adenosis
Lobular hyperplasia (adenosis)-Regular	4.2. Lobular hyperplasia, 4.2.2. Adenosis
Lobular hyperplasia (adenosis)-With secretory activity	4.2. Lobular hyperplasia, 4.2.2. Adenosis
Lobular hyperplasia (adenosis)-With fibrosis	4.2. Lobular hyperplasia, 4.2.2. Adenosis
Lobular hyperplasia (adenosis)-With atypia	4.2. Lobular hyperplasia, 4.2.2. Adenosis
Epitheliosis	4.1. Ductal hyperplasia, 4.2.1. Epithelial hyperplasia
Papillomatosis	4.1. Ductal hyperplasia, 4.2.1. Epithelial hyperplasia
Fibroadenomatous change	4.2.3. Fibroadenomatous change (feline mammary hypertrophy, fibroepithelial hypertrophy)
Gynecomastia	4.6. Gynecomastia
2. Benign neoplasms	2. Benign Tumors
Adenoma - simple	2.1.1. Simple adenoma
Intraductal papillary adenoma	2.4. Duct papilloma
Ductal adenoma	2.1.3. Basaloid adenoma
Fibroadenoma	2.2. Fibroadenoma
3. Malignant epithelial neoplasms	1. Malignant Tumors
Carcinoma - in situ	1.1. Noninfiltrating (in situ) carcinoma
Carcinoma - simple	1.3. Simple carcinoma
Carcinoma - simple a. tubular	1.2. Tubulopapillary carcinoma
Carcinoma - simple b. tubulopapillary	1.2. Tubulopapillary carcinoma
Carcinoma - simple c. cystic-papillary	1.2. Tubulopapillary carcinoma
Carcinoma - simple d. cribriform	1.4. Cribriform carcinoma
Carcinoma - micropapillary invasive	1.3. Simple carcinoma
Carcinoma - solid	1.3. Solid carcinoma
Comedocarcinoma	1.3. Simple carcinoma
Carcinoma - anaplastic	1.3.3. Anaplastic carcinoma
Intraductal papillary carcinoma	1.3. Simple carcinoma
Ductal carcinoma	1.3. Simple carcinoma
4. Malignant epithelial neoplasms - special types	1.4. Special types of carcinomas
Squamous cell carcinoma	1.5. Squamous cell carcinoma
Adenosquamous carcinoma	1.5. Squamous cell carcinoma
Mucinous carcinoma	1.6. Mucinous carcinoma
Lipid-rich (secretory) carcinoma	1.4.4. Lipid-rich carcinoma
Spindle cell carcinoma	1.4.1. Spindle cell carcinoma
Squamous cell carcinoma - spindle cell variant	1.4.1. Spindle cell carcinoma
Carcinoma - spindle cell variant	1.4.1. Spindle cell carcinoma
Inflammatory carcinoma	
5. Malignant mesenchymal neoplasms - sarcomas	1.5. Sarcoma
Fibrosarcoma	1.5.1. Fibrosarcoma
Other sarcomas	1.5.3. Other sarcomas

茶色字:Tumors in Domestic Animalsにしかない分類

青字:犬には無いが猫にある、猫には無いが犬にある、分類を流用

## Histological Classification of Mammary Tumors of the Dog

WHO	Tumors of Domestic Animals
1. Malignant Tumors	Malignant epithelial neoplasms
1.1. Noninfiltrating (in situ) carcinoma	Carcinoma - in situ
1.2. Complex carcinoma	Carcinoma - complex type Carcinoma and malignant myoepithelioma Carcinoma - mixed type
1.3. Simple carcinoma	Carcinoma - simple Carcinoma - simple d. cribriform Carcinoma - micropapillary invasive Comedocarcinoma Ductal carcinoma Intraductal papillary carcinoma Neoplasms of the nipple-Carcinoma Neoplasms of the nipple -Carcinoma with epidermal infiltration (Paget like)
1.3.1. Tubulopapillary carcinoma	Carcinoma - simple a. tubular Carcinoma - simple b. tubulopapillary Carcinoma - simple c. cystic-papillary
1.3.2. Solid carcinoma	Carcinoma - solid
1.3.3. Anaplastic carcinoma	Carcinoma - anaplastic
1.4. Special types of carcinomas	Malignant epithelial neoplasms - special types
1.4.1. Spindle cell carcinoma	Spindle cell carcinoma malignant myoepithelioma Squamous cell carcinoma - spindle cell variant Carcinoma - spindle cell variant
1.4.2. Squamous cell carcinoma	Squamous cell carcinoma Adenosquamous cell carcinoma
1.4.3. Mucinous carcinoma	Mucinous carcinoma
1.4.4. Lipid-rich carcinoma	Lipid-rich (secretory) carcinoma
1.5. Sarcoma	Malignant mesenchymal neoplasms - sarcomas
1.5.1. Fibrosarcoma	Fibrosarcoma
1.5.2. Osteosarcoma	Osteosarcoma
1.5.3. Other sarcomas	Chondrosarcoma Hemangiosarcoma Other sarcomas
1.6. Carcinosarcoma	Carcinosarcoma - malignant mixed mammary tumor
1.7. Carcinoma or sarcoma in benign tumor	Carcinoma arising in a complex adenoma/mixed tumor
2. Benign Tumors	Benign neoplasms
2.1. Adenoma	
2.1.1. Simple adenoma	Adenoma - simple Myoepithelioma Neoplasms of the nipple-Adenoma
2.1.2. Complex adenoma	Complex adenoma (adenomyoepithelioma)
2.1.3. Basaloid adenoma	Ductal adenoma Ductal adenoma with squamous differentiation
2.2. Fibroadenoma	Fibroadenoma
2.2.1. Low-cellularity fibroadenoma	Fibroadenoma
2.2.2. High-cellularity fibroadenoma	Fibroadenoma
2.3. Benign mixed tumor	Benign mixed tumor
2.4. Duct papilloma	Intraductal papillary adenoma
3. Unclassified Tumors	
4. Mammary Hyperplasias/Dysplasias	Hyperplasia/dysplasia
4.1. Ductal hyperplasia	Epitheliosis Papillomatosis
4.2. Lobular hyperplasia	Lobular hyperplasia (adenosis)
4.2.1. Epithelial hyperplasia	Epitheliosis Papillomatosis
4.2.2. Adenosis	Lobular hyperplasia (adenosis)
4.3. Cysts	
4.4. Duct ectasia	Duct ectasia
4.5. Focal fibrosis (fibrosclerosis)	
4.6. Gynecomastia	Gynecomastia

緑字:WHOにしかない分類

青字:犬には無いが猫にある、猫には無いが犬にある、分類を流用

## Histological Classification of Mammary Tumors of the Cat

WHO	Tumors of Domestic Animals
1. Malignant Tumors	3. Malignant epithelial neoplasms
1.1. Noninfiltrating (in situ) carcinoma	Carcinoma - in situ
1.2. Tubulopapillary carcinoma	Carcinoma - simple a. tubular Carcinoma - simple b. tubulopapillary Carcinoma - simple c. cystic-papillary
1.3. Solid carcinoma	Carcinoma - solid
1.4. Cribriform carcinoma	Carcinoma - simple d. cribriform
1.5. Squamous cell carcinoma	Squamous cell carcinoma Adenosquamous carcinoma
1.6. Mucinous carcinoma	Mucinous carcinoma
1.7. Carcinosarcoma	Carcinosarcoma - malignant mixed mammary tumor
1.8. Carcinoma or sarcoma in benign tumor	Carcinoma arising in a complex adenoma/mixed tumor
2. Benign Tumors	2. Benign neoplasms
2.1. Adenoma	Adenoma - simple
2.1.1. Simple adenoma	Adenoma - simple
2.1.2. Complex adenoma	Complex adenoma (adenomyoepithelioma)
2.2. Fibroadenoma	Fibroadenoma
2.2.1. Low-cellularity fibroadenoma	Fibroadenoma
2.2.2. High-cellularity fibroadenoma	Fibroadenoma
2.3. Benign mixed tumor	Complex adenoma (adenomyoepithelioma)
2.4. Duct papilloma	Intraductal papillary adenoma
3. Unclassified Tumors	
4. Mammary Hyperplasias/Dysplasias	Hyperplasia/dysplasia
4.1. Ductal hyperplasia	Epitheliosis Papillomatosis
4.2. Lobular hyperplasia	Lobular hyperplasia (adenosis)
4.2.1. Epithelial hyperplasia	Epitheliosis Papillomatosis
4.2.2. Adenosis	Lobular hyperplasia (adenosis)
4.2.3. Fibroadenomatous change (feline mammary hypertrophy, fibroepithelial hypertrophy)	Fibroadenomatous change
4.3. Cysts	
4.4. Duct ectasia	Duct ectasia
4.5. Focal fibrosis (fibrosclerosis)	

緑字:WHOにしかない分類

青字:犬には無いが猫にある、猫にはないが犬にある、分類を流用