

Table S1.

Supplementary table.1 Summary of all cases

Case No.	breed	age at initial diagnosis	sex	weight (kg)	BRAF mutation	TNM stage at initial diagnosis			preoperative medical treatment	effects of preoperative medical treatment	complication of preoperative medical treatment (VCOG-CTCAE/Grade)	days from CT to surgery	days from initial diagnosis to surgery	TNM stage at surgery			urinary tract obstruction at surgery	operation time(min)	ureteral opening	hospitalization (days)	margin dirty(+)/clear(-)	short term surgical complications	stool condition improvement (days)	post medical treatment	long term medical and surgery complications	outcome	cause of death	survival time from initial diagnosis (days)
						T	N	M						T	N	M												
1	Scotch terrier	9y3m	female	9.6	+	≤2	0	0	piroxicam	surgery within 2 weeks	no	14	12	2	0	0	-	219	vagina	9	urethra(+) ureter(-)	no	-	piroxicam	diarrhea(G2) CKD(stage3)	dead	CKD-related death	963
2	Pomeranian	10y9m	neutered female	3.2	+	≤2	0	0	piroxicam mogamulizumab	SD	vomit(G2) ALT high(G2) diarrhea(G2)	5	265	1	1	0	+	210	vagina	8	urethra(-) ureter(-)	diarrhea	7	piroxicam mogamulizumab routine subcutaneous infusion for CKD	pyelonephritis pancreatitis	dead	tumor-related death	481
3	Yorkshire terrier	12y8m	neutered female	3.6	-	≤2	0	0	piroxicam lapatinib	PR	lap : hypopigmentation(G1) pirox : BUN high(G1)	1	403	3	0	0	+	170	skin	6	urethra(+) ureter(-)	diarrhea	105	piroxicam lapatinib	pyelonephritis	dead	tumor-related death	691
4	Welsh corgi	10y9m	neutered female	13.6	+	≤2	0	0	piroxicam lapatinib	PR	lap : diarrhea(G2)	1	62	2	0	0	+	182	vagina	10	urethra(-) ureter(-)	ureteral anastomosis dehiscence (rope) diarrhea	8	piroxicam lapatinib	pyelonephritis	dead	CKD-related death	898
5	Shetland sheepdog	10y9m	female	8.4	+	≤2	0	0	piroxicam lapatinib	PR	pirox : BUN high(G2)	1	88	3	2	0	+	268	vagina	9	urethra(-) ureter(-)	ureteral anastomosis dehiscence (improved without treatment) diarrhea	9	piroxicam lapatinib	pyelonephritis aspiration pneumonia	dead	tumor-related death	132
6	Miniature dachshund	10y5m	neutered female	6.8	+	2	0	0	piroxicam	surgery within 2 weeks	no	8	8	2	0	1	-	176	vagina	9	urethra(+) ureter(-)	ureteral anastomosis dehiscence (rope) diarrhea	51	firocoxib toceranib	no	dead	tumor-related death	441
7	Miniature dachshund	14y9m	neutered female	6.9	+	≤2	0	0	piroxicam soraferenib	PR	sora : alopecia(G1)	0	396	3	0	1	+	unknown	vagina	3	urethra(+) ureter(-)	AKI euthanasia	-	-	-	dead	perioperative death (euthanasia)	399
8	French bulldog	11y8m	female	7.5	-	≤2	0	0	piroxicam	surgery within 2 weeks	no	1	8	2	0	0	-	225	vagina	6	urethra(-) ureter(-)	diarrhea	55	piroxicam	no	dead	tumor-related death	365
9	French bulldog	11y8m	neutered female	13.6	-	2	0	0	piroxicam	SD	no	21	43	2	0	0	-	306	vagina	10	urethra(-) ureter(-)	diarrhea	16	piroxicam lapatinib	pyelonephritis lap : erythema multiforme(G1)	survive	-	267
10	French bulldog	13y3m	neutered female	4.1	-	2	0	0	piroxicam	surgery within 2 weeks	no	0	8	2	0	0	+	248	vagina	10	urethra(+) ureter(-)	AKI diarrhea	21	piroxicam mogamulizumab routine subcutaneous infusion for CKD	pyelonephritis lap : diarrhea(G2) CKD(stage3)	survive	-	77
11	Chihuahua	7y5m	neutered male	3.3	-	≤2	0	0	piroxicam	PD	no	21	56	1	0	0	-	277	prepuce	6	ureter(-)	diarrhea	14	piroxicam mitoxantrene	mitox : bone marrow suppression CKD(stage2)	dead	heart & kidney disease	1833
12	Pomeranian	11y0m	neutered male	6.3	+	≤2	0	0	piroxicam mogamulizumab	SD	mogam : vomit(G2) BUN high(G1)	0	182	2	1	1	-	215	prepuce	7	ureter(-)	diarrhea	7	piroxicam mogamulizumab	no	dead	tumor-related death	457
13	Pomeranian	10y0m	neutered male	6.1	+	≤2	0	0	piroxicam toceranib	PD	no	60	670	3	1	1	+	111	prepuce	3	ureter(+)	diarrhea	diarrhea until death	piroxicam	pyelonephritis CKD(stage3)	dead	tumor-related death	746
14	Jack russell terrier	14y4m	male	6.1	+	≤2	1	0	piroxicam lapatinib	PR	lap : ALT high(G3) pirox : BUN high(G3)/Cre(G2)	no	232	2	1	0	+	168	prepuce	3	ureter(-)	diarrhea	13	piroxicam lapatinib therapeutic diet for kidney	lap : ALT high(G3) CKD(stage2)	dead	tumor-related death	530
15	Shetland sheepdog	11y3m	neutered male	8.6	+	≤2	0	0	piroxicam lapatinib	PR	no	0	475	2	1	0	+	204	prepuce	3	ureter(-)	diarrhea	7	piroxicam mogamulizumab	no	dead	tumor-related death	931
16	Cavalier king charles spaniel	10y8m	neutered male	9.6	+	3	0	0	piroxicam	surgery within 2 weeks	no	4	4	3	0	0	-	274	prepuce	10	ureter(-)	no	-	piroxicam	no	dead	tumor-related death	322
17	Papillon	11y0m	neutered male	5.4	+	≤2	0	0	piroxicam mitoxantrene firocoxib soraferenib	mitox : SD sora : PR-PD	mitox : neutropenia(G3) pirox : diarrhea(G2) sora : hypertension(G2)	no	477	2	0	0	+	134	prepuce	4	ureter(-)	no	-	soraferenib routine subcutaneous infusion for CKD	pyelonephritis vom.diarrhea(G2)	survive	-	743
18	Mongrel	11y8m	neutered male	7.4	no	≤2	0	0	piroxicam	SD	no	1	82	2	0	0	-	228	prepuce	3	unknown	ureteral obstruction	-	piroxicam	pyelonephritis	dead	unknown	389
19	Jack russell terrier	9y7m	male	7.8	-	2	0	0	piroxicam	PD	no	21	68	1	0	0	-	242	prepuce	8	ureter(-)	diarrhea	13	piroxicam	pyelonephritis	survive	-	397
20	Toy poodle	8y5m	neutered male	2.6	-	≤2	0	0	piroxicam soraferenib	PR	no	1	153	2	0	0	+	232	prepuce	8	ureter(-)	diarrhea	42	lapatinib	no	survive	-	384
21	Shetland sheepdog	12y5m	neutered male	11.9	-	3	0	0	piroxicam	surgery within 2 weeks	no	no	11	3	0	0	+	unknown	prepuce	3	ureter(+)	pyelonephritis diarrhea	16	firocoxib lapatinib	pyelonephritis	dead	tumor-related death	279

Table S2.

Supplementary table 2. Preoperative medical treatment

Preoperative medical treatment	Number of cases	Median days from initial diagnosis to surgery	Range (days)
NSAIDs Lapatinib	5	232	62 - 475
NSAIDs	4	62	43 - 82
NSAIDs Mogamulizumab	2	223.5	182, 265
NSAIDs Sorafenib	2	274.5	153, 396
NSAIDs Toceranib	1	670	-
NSAIDs Mitoxantrone Sorafenib	1	477	-

Table S3.

Supplementary table.3 Surgical margins of the dogs treated with total cystectomy

Sex		Margin			Local recurrence
		Clear	Dirty	Unknown	
Female (n=10)	Ureter	9	1	0	0
	Urethra	5	5	0	0
Male (n=11)	Ureter	8	2	1	1