

# CASE STUDY

## cCRP Clinical Application

May 2022

AmiShield x NPUST Veterinary Medical Teaching Hospital

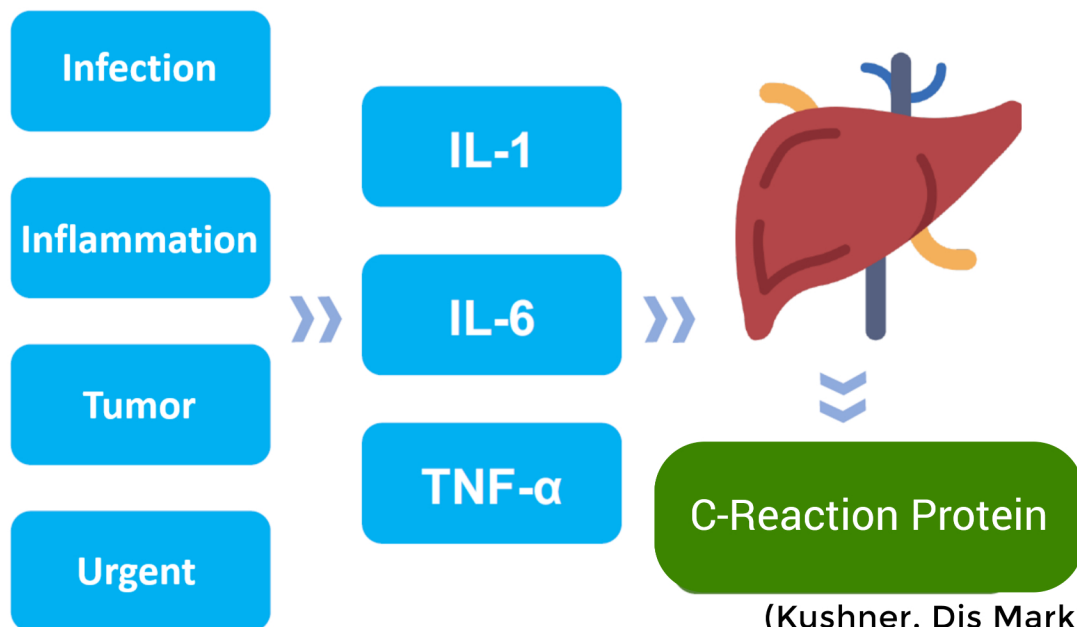


# Case Study : cCRP Clinical Application

cCRP (Canine C-Reactive Protein) is the APP (Acute Phase Protein) in dogs' blood, used to assess systemic responses caused by the immune system. It is the highly sensitive marker of systemic inflammation but no specificity. When systemic inflammation occurs, cCRP reaction is more rapid than leukocytes (WBCs) ; therefore, cCRP is very suitable for diagnosing and monitoring the inflammation.



▼ Figure 1. Activation of Canine C-Reaction Protein (cCRP)



(Kushner, Dis Markers, 1987)  
(Samols et al., Cytokine Reference, 2002)

The following diseases that increase cCRP.

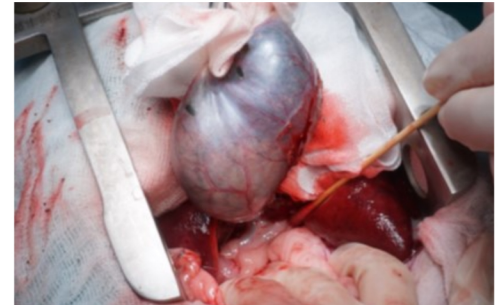
- Surgical trauma
- Rheumatoid arthritis
- Polyarthritiis
- Intestinal obstruction
- Inflammatory bowel disease
- Lymphoma
- Acute pancreatitis
- Pyometra
- Pneumonia
- E. coli endotoxaemia
- Babesiosis
- Bordetella bronchiseptica
- Ehrlichia canis infection
- Leishmaniosis
- Leptospirosis
- Parvovirus infection
- Trypanosomiasis
- Bacterial enteritis

◆ **Case 1**

Canine: 8 years old, Beagle

Diagnosis: (1) Atopy

(2) Bile duct dilatation and biliary sludge



▼ Table 1. The levels of CRP in case 1

Item	Preoperative	D2	D3	D4
WBC (/μL)	30,020	39,120	-	42,080
CRP (mg/L)	<b>52.4</b>	21.7	15.7	5.6

◆ **Case 2**

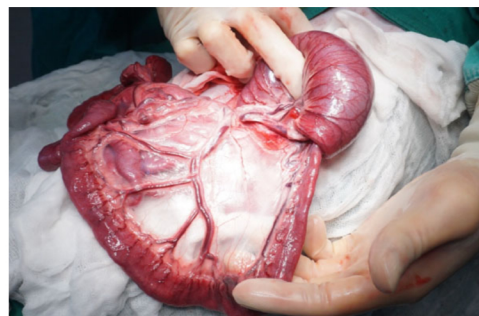
Canine: 1 years old, Golden Retriever

Diagnosis: (1) Vomiting 5 days ago

(2) Poor spirit and appetite

(3) Pain in the left anterior abdominal cavity

(4) Parenchymal mass on palpation of anterior abdominal cavity



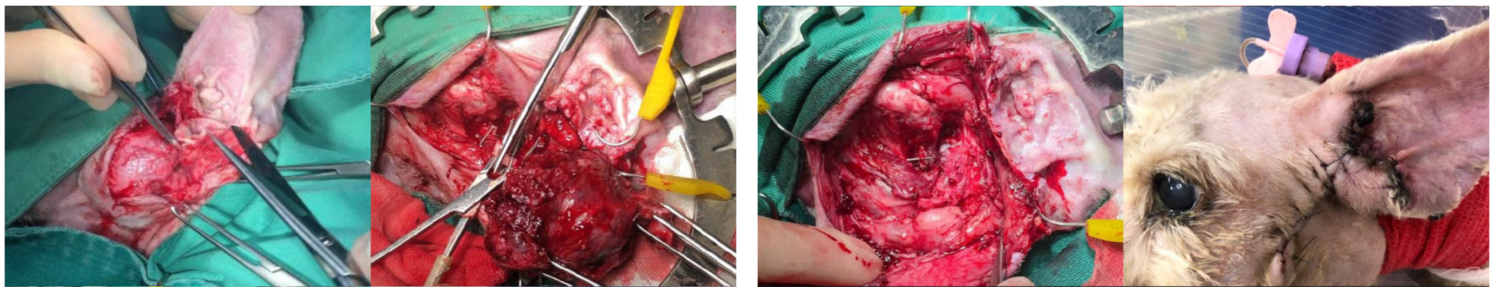
▼ Table 2. The levels of CRP in case 2

Item	Preoperative	Rev1 D3	Rev2 D5	D6	D8
WBC (/μL)	30,100	29,020	21,930	31,820	25,660
CRP (mg/L)		42.6	46.5	<b>62</b>	23

◆ **Case 3**

Canine: 15 years old, Poodle

- Diagnosis: (1) Found a lump under the ear 6 months ago  
 (2) No improvement with antibiotic treatment in another hospital  
 (3) FNA: Cerumen Adenoma  
 (4) US: Enlarged left adrenal gland



▼ **Table 3. The levels of CRP in case 3**

Item	Preoperative	D2	D3	D6	D10	D17	D27
WBC (/μL)	38,750		54,900	38,820	15,530	15,810	13,220
CRP (mg/L)	25.3	3	21.7	30.7	44.7	81.6	6.7

◆ **Conclusion**

1. Applicable to acute and severe cases.
  - Severe and systemic infection
2. CRP as a prognostic assessment tool.
  - Before surgery, 24 hours after surgery (expected peak) and 48 hours (tracking)
3. CRP as a monitoring tool.
  - Effects of antibiotics and steroids

◆ **Reference:**

This case study was conducted by Associate Professor Cheng-Shu Chung, Director of Small Animal Surgery, Veterinary Medical Teaching Hospital, National Pingtung University of Science and Technology. cCRP levels in cases here were measured by AmiShield veterinary chemistry analyzer and the exclusive cCRP discs.

## Q & A

Q1. My dog looks healthy, do it need to test the cCRP?

A1. Dogs have high tolerance to pain. If there is inflammation in vivo, the symptoms cannot be seen. Therefore, we need to confirm whether inflammation occurs in cats through testing cCRP.

Q2. Can cCRP be used to diagnose disease?

A2. No, it is used for inflammation screening and treatment tracking. Various types of inflammation can lead to abnormal cCRP levels, so they are the ideal tool for inflammation screening and treatment tracking.

Q3. How to test the cCRP from dogs?

A3. For blood test, only 0.06 mL sample is required, and the test result can be available after 15 minutes.

Q4. Does cCRP normal mean my dog is healthy?

A4. It just means that there is no inflammation in vivo. Non-inflammation-related diseases still need to be diagnosed and ruled out by a veterinarian.

