

# Suspected phenobarbital induced thrombocytopenia in a dachshund

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## Background

Haematological changes are common in dogs treated with phenobarbital although isolated thrombocytopenia has rarely been reported (Bersan et al., 2014; Scott et al., 2021).

## Case report – Clinical history

### General

- **Phenobarbital treatment (1.6 mg/kg BID) due to idiopathic epilepsy**

### Specific anamnesis

- **Gingival bleeding since two days**

Referring veterinarian (consultation on the day before)

- „Tissue proliferation“ at the maxilla

Referral clinic (day before)

- “Tissue proliferation“ = haematoma

- Petechiae in the oral cavity

- Platelet count: 3 000/μl

- Start of treatment with:

- prednisolone (2 mg/kg BID) and • doxycycline

Owners' observations (night)

- No further haemorrhages observed • Melaena

Referral clinic (day of initial presentation)

- Dog lively, but still gingival haemorrhage

- Platelets not detectable

- PCV decreased from 30 ⇒ 21 %

## Case report – Laboratory findings

### In-house

- Platelet count: 5,000/μl (reference range: 150–500 000/μl)

- Moderate normocytic, normochromic anaemia (PCV 22 %)

- Mild panhypoproteinaemia

### Further investigations

- Platelet-associated antibodies: negative

- Coombs test: negative

- Increased *Anaplasma phagocytophilum* antibody titre (48.97 TE; negative: < 8 TE, questionable: 8–11 TE)

- Negative serology for: *Leishmania*, *Babesia canis*, *Ehrlichia canis*, *Dirofilaria immitis*

## Case report – Further development

Day 12: Platelet count: 12 000/μl!

Recurrent epistaxis and intestinal bleeding

⇒ No response to immunosuppression

⇒ No response to antibiotics

Termination  
• immuno-  
suppression  
• antibiotics

Idiosyncratic reaction to phenobarbital?

- Parallel start of imepitoin (25 mg/kg BID)

- Tapering of phenobarbital and termination on day 17

- In addition, temporarily parallel administration of levetiracetam

## Discussion, conclusions

In this case, in the first instance *Anaplasma phagocytophilum* or primary immune-mediated thrombocytopenia were suspected as causes for severe thrombocytopenia. Anaemia was most likely due to acute haemorrhage.

Due to the lack of response to respective treatment, possible idiosyncratic reaction induced by phenobarbital moved into our focus.

Further development indicated that high-grade thrombocytopenia in our patient was likely the consequence of an idiosyncratic reaction induced by phenobarbital and this mechanism should be considered as a differential diagnosis in analogous cases.

## Case report – Signalment

- Dachshund
- Male intact
- 14 years old
- Body weight: 9,5 kg

## Case report – Initial clinical examination

- Reasonably good general clinical condition
- **Pale mucous membranes, petechiae, ecchymoses**
- Left upper jaw buccal, area of P1/P2: **haemorrhagic soft mass** (blood clot) (Fig. 1)
- After its spontaneous detachment ⇒ **gingival lesion**
- **Melaena** (adhering to thermometer)



Fig. 1: Gingival bleeding in a thrombocytopenic dachshund



Fig. 2: Blood transfusion in a thrombocytopenic dachshund

## Case report – In-house treatment (9 days)

### Immunosuppression

- Prednisolone (reduced due to haemorrhagic vomitus) to 1 mg/kg within 4 days

- Azathioprine (2 mg/kg SID)

### Other

- Local haemostyptic treatment

- Doxycycline (5 mg/kg BID) discontinued on day 4, replaced by marbofloxacin due to GI complaints

- 2 blood transfusions (Fig. 2)

- Tranexamic acid (20 mg/kg TID)

- GI protection (pantoprazole, sucralfate)

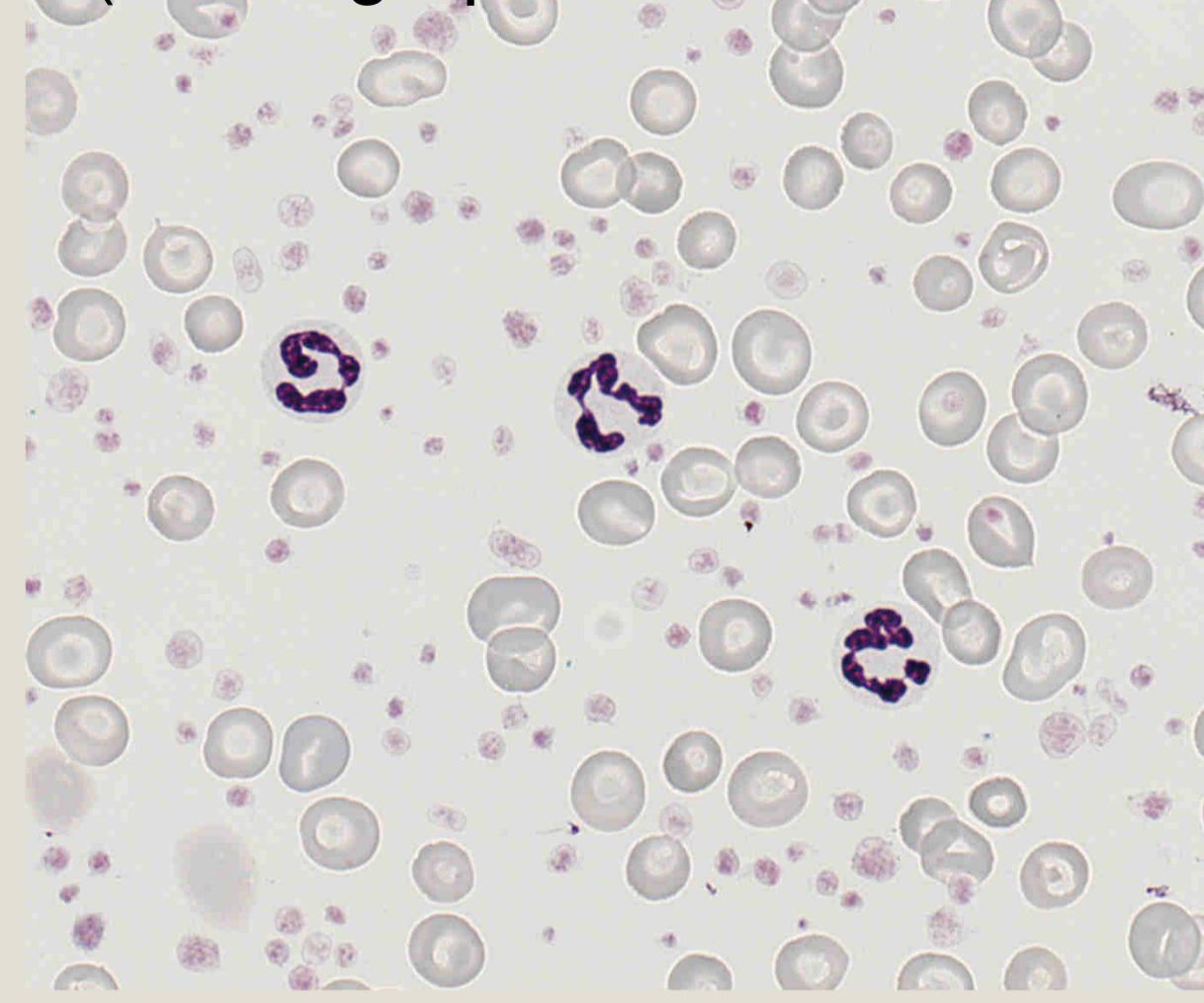
## Case report – Further development

- Platelet count day 21\*: 1 363 000/μl

- Platelet count day 24\*\*: 3 768 000/μl (Fig. 3)

- Normalisation of platelet count within one month

⇒ Platelet count within reference range since 1.5 years (although patient receives exclusively antiepileptic treatment)



\* 4 d after termination of phenobarbital treatment  
\*\* 7 d after termination of phenobarbital treatment

Fig. 3: Rebound thrombocytosis 7 days after termination of phenobarbital treatment (platelet count: 3 768 000/μl; Pappenheim stain, 1000x)

## References

- Bersan, E., Volk, H.A., Ros, C., De Risio, L. (2014): Phenobarbitone-induced haematological abnormalities in idiopathic epileptic dogs: prevalence, risk factors, clinical presentation and outcome. *Vet. Rec.* 175, 247. doi: 10.1136/vr.102158
- Scott, T.N., Bailin, H.G., Jutkowitz, L.A., Scott, M.A., Lucidi, C.A. (2021): Bone marrow, blood, and clinical findings in dogs treated with phenobarbital. *Vet. Clin. Pathol.* 50, 122–131.