

## CASE REPORT

*Crotalus oreganus concolor*: E a Ca  
V A a a a D a c C u u  
M u c S

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## Case Presentation

A healthy 61-year-old male, febrile and headache, was admitted to a local hospital (Fig. 1A). Physical examination revealed a pulse of 110 bpm, blood pressure of 120/80 mmHg, respiratory rate of 20 breaths/min, and temperature of 38°C. He was conscious and oriented. There were no focal neurological deficits. His heart sounds were normal. His abdomen was soft, non-tender, and non-distended. His extremities were warm and without edema. Laboratory results showed a white blood cell count of 12,000/mm<sup>3</sup>, hemoglobin of 13.5 g/dL, and platelets of 250,000/mm<sup>3</sup>. Urinalysis was unremarkable. A chest X-ray showed no abnormalities. An electrocardiogram showed sinus tachycardia. A complete blood count, liver function tests, and renal function tests were within normal limits.

## METHODS

Ve ! a e ac ed, a all f , he *Crotalus oreganus concolor* e . b i ble f he b i e a , i a el 4 d a f e he b i e a d c e if ged , elle he cell deb i , a d he , e a - a a a l , hili ed (fl id ield 120  $\mu$ L;  $\approx$  27 ! g d e ! ). L , hili ed e ! a 1 bili ed i , h , ha e - b ffe ed ali e (8.0! g ! L $^{-1}$ ), a d 200  $\mu$ L(1.6! g) a b - jec ed e e ed- ha e high- e f , a ce liq id ch , a - g a h (RP-HPLC) a e ed, e i 1 ; 1- i f aci - e e c illec ed a d l , hili ed. <sup>13</sup> T i e e ide ified f , hek el i , file f , ified i a d , a - ified ia, eak a e a i eg a i (e ce age al a ea).

HPLC fac i e e al bjec ed , l ac la! ide gel elec , h e i (SDS-PAGE) de ed ci g c di - i ide if ch , a g a ! , eak. <sup>13</sup> C de e ! a a a ed f , e i c e ia Pie ce BCA a a a d f 6e ! eac i i e c ! ! a le ake e ! . <sup>10,14</sup> The eda a e e edi c j ci i h HPLC ch , a - g a ! da a ide if he , ei fa! ilie , e e a d hei elai e ab da ce i he e ! .

## DISCUSSION

O , aie , ! ill aea e ial diag icc - d ! cli icia ! a face i ca e f akebi e e ! a i : Wha ! , ! , ! igh be e ! -i d ced effec , a d ha , ! , ! igh be elaed e -i d ced h i l - gic e , e ? O , aie e , e ie ced ge e ali ed, a e he - ia, bl ed i i , a e f , a ic, e a -like ! , ! f he ha d a d fee (ca , edal , a ! ), b ea hi g diffi c - lie , ! b e , a d ge e ali ed eak e ha , e i ed f da , all ! , ! c i e i h e ! -i d ced effec e , edi he ca e f N h A! e ica a le ake e e - ! ai , i cl di g b *Crotalus oreganus concolor*. <sup>9,15-17</sup> He e , i , aie , he e a -like ca , edal , a ! , a ha e bee e ! i d ced, b i ead f , a ie

a ie -i d ced h , e e ilai , h g ! , a ! ee c ff i fla i . <sup>18,19</sup> *Crotalus oreganus concolor* e ! c - ai , ! , ic a d e icc , e ca able felici - i g e ic , ! , ! <sup>9,10,12</sup> P ified *Crotalus oreganus concolor* e ! , i i jec ed i , ! ice elici , ! ic effec f a id a a ia, hi d li! be e i , a d e , ia di e . <sup>7,20</sup> C illec i el , ! , ! i he e e caec , ! - bi ed i h he i e , e a i f he e , ! a al i f he i flic i g ake , i def i ee i g dic i .

Ve ! , akebi e ca igge igifica a ie , leadi g a a , ! ic e , e f h , e e ilai - i d ced alkale ia i hc , e q e , ec i i ai , fh , cal - ce ia, e l i g i , ! , ! f b ea hle e a dda eaaac ia

i flai g ea e ha he! ea a eial e eca e l  
i heha dad i ga e f! eaca hala gealji  
fle i ih he i e hala gealji f he fi ge a d  
h! be e ded ha he h! bi i a ig e,  
a be ed i aie (Fig e 2B). Thi he ! e  
ha bee e ed i 1 4% f heal h i di id al b  
ha bee e ed bea cia ed ih cae f ake-  
bie e e ! ai .<sup>19</sup> Al h gh *Crotalus oreganus concolor* ! ic e ! c ! e ca i d ce ! cle  
c acile aci i , ca i g a id ea -like hi d li! b  
he e e i i ice(a ! ! ! e ha il  
he e e i f he a kle , fee , a d e be ed i  
aie ), hi ! ! a likel a e -i d ced e e  
a he ha e ! id ced<sup>20,22</sup>

O aie ' he ! e l gic ! ! f a -  
e he ia, e i a di e , a d al b d eak e ! a  
ha ebee elaed he high! i c e a dc c l

i i he *Crotalus oreganus concolor*'s e ! (Fig e 3,  
**Table 1**). S die i ! ice i jec ed i h *Crotalus oreganus*  
*concolor* e ! h ed he died f ! a id e i a  
fail e, gge i g ha e ! ! a ha ec ib ed  
aie ' e i a diffic l , a ha bee e ed  
cc af e *C scutulatus*, *C cerastes*, *C oreganus helleri*,

e 1 gic effec a gi g f ! a e he ia ei e a d c ! a. C e ! e 1 , a ie ca e hib ! l i lec ! bi- ai f cl i cal ! a ife ai a i g i e ei .<sup>28</sup> Th , he ab e ce f he ! a 1 gic effec i , a ie , i he e e ce f e 1 gic ! , a cha ac e - ic fa le ake e e ! ai . Ne 1 gic ! , a fe C cerastes a d C concolor e e ! ai , ih he ! a 1 gic effec , ha e bee e ed.<sup>9,15-17</sup>

L cal d c ! lica i i a ie ee ! de , i cl di g ecch ! i , elli g, ai , a d ki l ghi g. Ele a ed CK, a i el ed ! ake f i e da! age a d ! ec i , ha bee e ed i 2 ca e f Crotalus oreganus concolor e e ! ai ( a ge 1800–17,000 IU·L<sup>-1</sup>) a d i he ab e ce fc ag 1 , a hic c ! lica i .<sup>15,29</sup>

O a ie ' ele a ed CK al e (3394 U·L<sup>-1</sup>) a 22 h afe e e ! ai a i dicai e f e ! -i d ced l cal i e ! cle da! age he bi e h ! b.

Medica i ! a i fl e ce ake e e ! ai ! , a d a ie ' ! edica i (ae ll, i a i a , a d a i i li e) ha e e ed ad e e effec f bl ed i i , ! be , che igh e , a e he ia, a d eak- e ! il a a ie ' ! .<sup>30,31</sup> O a ie e ed ha i g ad e e effec he e ! edica i bef e he bi e, gge i g d g/ e ! i e ac i e e c ib be ed ! .

Ve ! a al e f he e , ible ake e ea led ab - da PLA<sub>2</sub>-ba ed

Ack ledg! e : A ecia i i e e ded P fe Da idWa ell  
f i igh f 1c ! ! e ega di g he cli ical ca e.

A h C ib i : Ad*i*ii fca eda a da al i fca eda a (DEK, MO, VS, JG); h c edi : Fig e 1 (DEK), Fig e 2 (JG); d af i g fca ea d e all! a ci (DEK); ad*i*ii f e ! da a a da al i f e ! da a (SPM, CFS); d af i g e ! a al i i f! a ci (SPM, CFS); ci cal e ii a da al ff i al a ci (DEK, SPM).

Final/Material Summary: Note.

Dicile : N e.

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