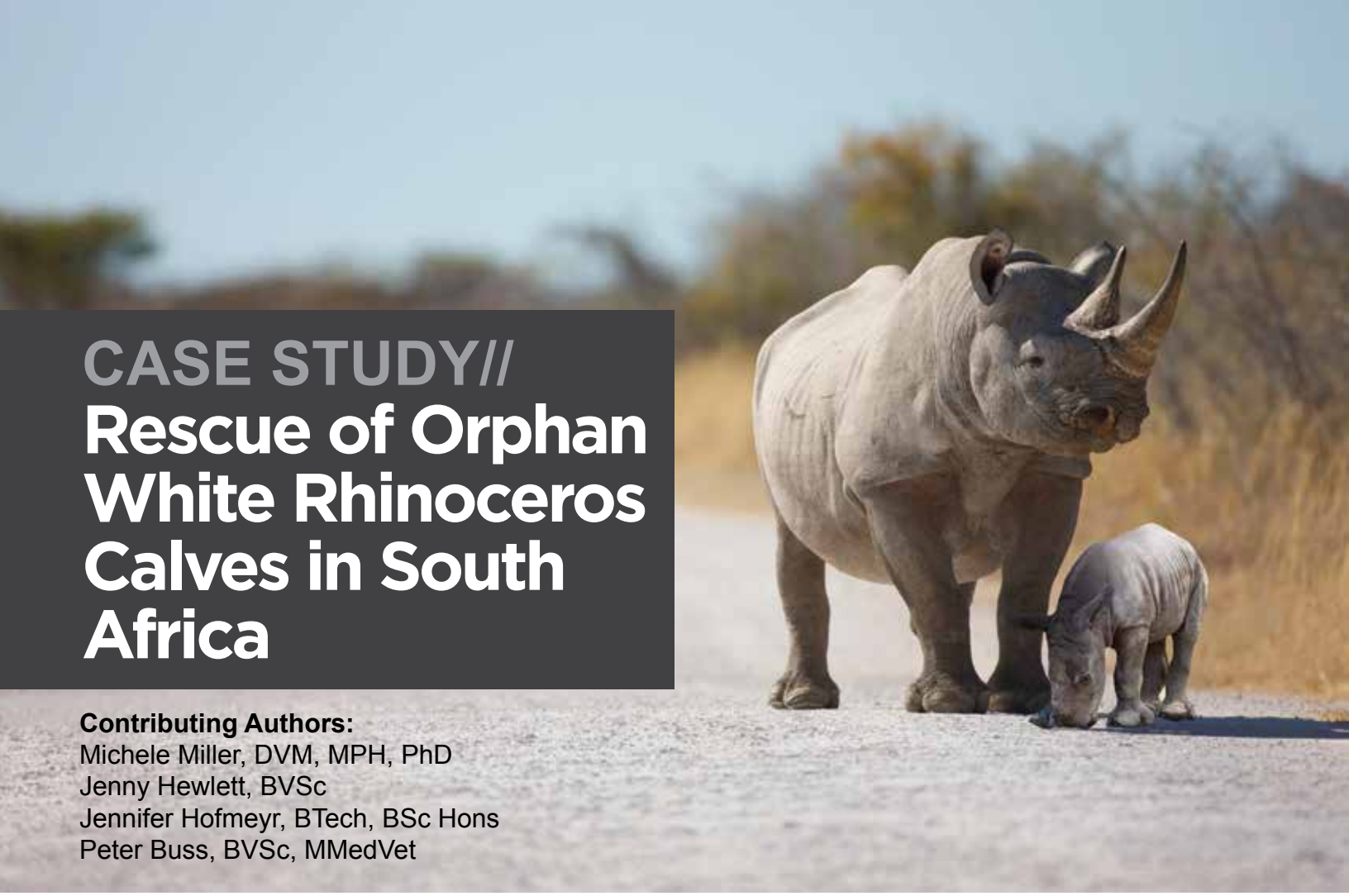

CASE STUDY//

Rescue of Orphan White Rhinoceros Calves in South Africa

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With the increasing diligence and efforts to arrest the global escalation in poaching, there has been an increasing demand to treat injured and orphaned rhinoceros. Kruger National Park in South Africa has been at the forefront of this fight. With 1004 rhinos poached in South Africa in 2013, dedicated professionals work tirelessly to protect these magnificent animals and deter these horrific acts. Poachers are indiscriminate in their quest for rhino horn and will frequently shoot females regardless of the presence of dependent calves. In some cases, young orphans will be found standing next to their dead mother in the bush, at risk of death from dehydration or predation. When discovered, a team is mobilized to rescue the calf and move it to a safe sanctuary.

Figure 1

Orphan white rhino calf with poached mother.

During March 2014, in a span barely over one week, two young white rhino calves were recovered and treated after their dams were poached in separate episodes. Since the youngsters were wild-born and large enough to cause injury to people, they were darted with drugs to permit safe handling (Figure 1). Once they became immobilized, a field team of veterinarians, field rangers, and helicopter pilot set to work to stabilize the animal and bring it to the veterinary facility for further evaluation. A blindfold and ear plugs were taped in place to keep the animal calm, while intravenous fluids

Figure 2

Preparing orphan rhino calf for helicopter transport.

containing glucose were administered through catheters placed in veins in the ears. The patient was loaded onto a stretcher and placed inside the helicopter for transport (Figure 2). Keeping the animal asleep was a crucial component for the safety of the animal and team during this phase.

Once it arrived at Veterinary Wildlife Services facilities near the main camp in Skukuza, blood samples were immediately evaluated in the laboratory to assess the health status and determine further treatment. Hematologic results are shown in (Table 1) for each of the calves. Serum chemistry values were evaluated using a large animal rotor in the ABAXIS VetScan VS2 (Table 2). Abnormalities observed were changes in white blood cell counts with calf 1 having a suspected stress leukocytosis and calf 2, leukopenia. In addition, both calves were considered mildly dehydrated with mild to moderate anemia and hypoalbumenia. However, these values along with the increased ALP and phosphorus levels were deemed to be relatively normal age-related changes based on observations in other juvenile rhinos. Although the estimated time that each calf was orphaned ranged between 1 to 2 days, both appeared to have reasonably good health status based on the clinical examinations and overall blood results. The importance of being able to assess the hydration status using clinicopathologic results aided the plan for appropriate fluid therapy. In addition to IV fluids, the calves were prophylactically treated with antibiotics, omeprazole, and a tranquilizer prior to being transported to a nearby sanctuary licensed to rear orphan rhino calves. Within a few days, the calves were regularly drinking formula from a bottle, active and responsive to their caretakers.

With the support of ABAXIS, research on serum chemistry values has generated baseline data for free-ranging white rhinoceros in Kruger National Park, which allowed comparison to the orphan calves' values.[1] The importance of having reference ranges for the population being evaluated cannot be overestimated. Due to effects of environmental, management, and population health factors, a baseline set of values established from healthy individuals in the same habitat using the same laboratory equipment and reagents ensures the most accurate assessment of results. When working with wildlife, distance to a laboratory and time lag in obtaining results often create a logistical challenge that does not allow the veterinarian to obtain essential information that can lead to optimal treatment of a patient. Since the ABAXIS VetScan VS2 is easy to use even in remote locations, results can be available in a timely manner to help determine health status and direct treatment, as demonstrated in these two rhino cases.

Table 1

HEMATOLOGY VALUES FOR ORPHAN WHITE RHINO CALVES

	Calf 1	Calf 2	KNP rhino values (95% CI)
WBC x 103/mm3	23.0	2.1	13.4 - 15.0
RBC x 106/mm3	8.80	6.65	7.07 - 7.62
Hgb g/dl	14.1	10.7	14.4 - 15.5
Hct %	42.3	32.5	43.0 - 45.9
Platelets x 103/mm3	307	385	504 – 590
MCV um3	48	49	60 – 61
MCH pg	16.0	16.2	18.6 - 21.4
MCHC g/dl	33.2	33.0	30.0 - 35.2

Table 2

LARGE ANIMAL CHEMISTRY ROTOR VALUES FOR ORPHAN WHITE RHINO CALVES.

	Calf 1	Calf 2	KNP rhino values (95% CI)
Alb g/dl	1.4	1.5	2.4 – 2.7
ALP U/L	130	198	53 – 59
AST U/L	41	62	36 – 42
Ca mg/dl	11.2	11.7	11.3 – 11.9
GGT U/L	8	9	11 – 13
TP g/dl	7.0	6.2	9.3 – 9.6
Glob g/dl	5.5	4.7	6.4 – 6.8
BUN mg/dl	10	13	9 – 10
CK U/L	150	162	118 – 138
Phos mg/dl	8.4	8.3	3.6 – 6.5
Mg mg/dl	3.4	4.1	3.0 – 3.2

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Reference

1. Mathebula, N., M. Miller, P. Buss, J. Joubert, L. Martin, M. Kruger, M. Hofmeyr, and F. Olea-Popelka. 2012. Biochemical values in free-ranging white rhinoceros (Ceratotherium simum) in Kruger National Park, South Africa. J. Zoo Wildl. Med. 43: 530-538.