Aims:  
① To determine risk factors for ensnarement.  
② To better understand how factors associated with veterinary intervention impact the one-month survival of mountain gorillas.

Hypotheses:  
① Risk factors including age, sex, season, and co-morbidity are associated with increased risk of ensnarement.  
② For ensnared individuals, co-morbidity, snare-type, time-to-intervention, wound treatment, and wound severity affect the gorilla’s likelihood of lasting physical impairment or death one-month post-intervention.

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Materials & Methods:  
Design: Retrospective case-control study of 132 mountain gorillas.  
Study site: Volcanoes National Park, Rwanda (Fig. 2).  
Statistics: Regression analyses of risk factors associated with case or control outcome using Stata software.  
① Risk factors - snare entrapment outcome:  
Cases: snared gorillas (n=37).  
Controls: gorillas that received interventions for other reasons (e.g., respiratory disease) (n=95).  
Risk factors: age, sex, season, and co-morbidity.  
② Clinical intervention factors - survival status outcome:  
Cases: snared gorillas who died or suffered physical impairment one-month post intervention (n=5).  
Controls: snared gorillas that survived and fully recovered one-month post intervention (n=32).  
Clinical factors: co-morbidity, time to intervention, use of anesthesia, treatment protocol, and wound severity.

Results:  
① Risk factors that increase chance of snare entrapment:  
Young age: gorillas <8 years old.  
② Clinical intervention factors that lead to impaired survival status:  
Co-morbidity: presence of simultaneous disease.  
Delayed intervention: interventions that took ≥3 days to execute.  
Severe wounds: with necrotic and ischemic tissue (Fig. 3).  
③ Statistical significance defined as P<0.05

Discussion:  
① Clear success of Gorilla Doctors: Of the 132 interventions in Rwanda, all but 19 individuals recovered completely (an 86% success rate).  
② Focus future monitoring efforts on younger animals: With 86% of snared cases occurring in gorillas less than 8 years old, encourage vigilant monitoring of this age-class.  
③ Strive for rapid response: Timely clinical interventions and careful daily observations could improve one-month survival status.  
④ Strengths of study: Robust sample size (n=132) for investigating an important cause of morbidity in an endangered species.  
⑤ Weaknesses of study: Due to limitations of available data, we were restricted to assessing survival status at one-month.

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Introduction:  
① Mountain gorillas are critically endangered.  
② Extreme conservation efforts have helped increase their population from 250 animals (1980) to 880 animals (2011).  
③ Major threats include habitat encroachment, zoonotic disease, political instability, and snare-related trauma.  
④ In Rwanda, all mountain gorillas live in Volcanoes National Park where, unfortunately, hunters can illegally set snares for forest wildlife.  
⑤ Gorilla Doctors provides veterinary care for mountain gorillas in Rwanda, Democratic Republic of Congo, and Uganda (Fig. 1).  
⑥ Between 1995 – 2015 Gorilla Doctors has performed 132 medical interventions in Rwanda, including 37 for snare-related trauma.