ABSTRACT

Background

Natural infections with soil-transmitted nematodes occur in non-human primates (NHPs) and have the potential to cross primate-species boundaries and cause diseases of significant public health concern. Despite the presence of NHPs in most urban centres in Kenya, comprehensive studies on their gastrointestinal parasites are scant.

Objective

Conduct a cross-sectional survey to identify zoonotic nematodes in free-ranging NHPs found within four selected urban and peri-urban centres in Kenya.

Methods

A total of 86 NHPs: 41 African green monkeys [AGMs] (*Chlorocebus aethiops*), 30 olive baboons (*Papio anubis*), 5 blue monkeys (*Cercopithecus mitis stuhlmanni*) and 10 red-tailed monkeys (*Cercopithecus ascanius*) were sampled once in situ and released back to their habitat. Microscopy was used to identify nematodes egg and larvae stages in the samples. Subsequently, PCR coupled with high-resolution melting (PCR-HRM) analysis and sequencing were used to identify nodule worms.

Results

NHPs inhabiting densely populated urban environs in Kenya were found infected with a rich diversity of nematodes including three potentially zoonotic nematodes including *Oesophagostomum stephanostomum, Oesophagostomum bifurcum* and *Trichostrongylus colubriformis* and co-infections were common.

Conclusion

Phylogenetic analysis showed that *O. stephanostomum* from red-tailed and blue monkeys have a close evolutionary relatedness to human isolates suggesting the zoonotic potential of this parasite. Moreover, we also report the first natural co-infection of *O. bifurcum* and *O. stephanostomum* in free-ranging AGMs.