

Taking Blood from Göttingen Minipigs while placed in a sling

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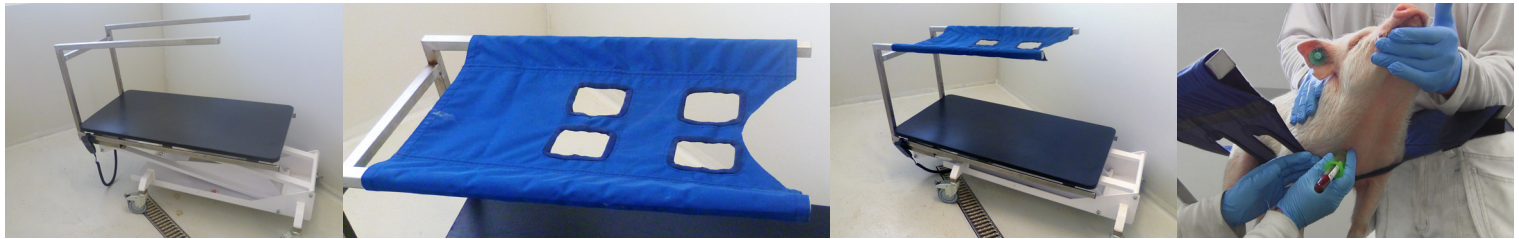
Abstract

Traditionally Minipigs are restrained in dorsal recumbency to have access to the blood vessels in the neck. (picture on the left) Minipigs, like any other animal, do not particularly like to be restrained and being turned on their back with their belly exposed. With increasing age and weight this method creates also some physical challenges to the technicians. The force needed to control a resisting Minipig can be considerable. Lifting and turning a larger Minipig on its back could also infringe some occupational health regulations. The sling has been proven to be a valuable restraint for various procedures with the Minipig. This study showed that with slight modification the sling can be used to restrain Minipigs for blood sampling and thus reduce strain on animals and personnel.



Materials and Methods

The aim of this study was to test whether the sling could be used as a restraint in various blood sampling situations. A standard sling was modified and several options explored to find the most satisfying design.

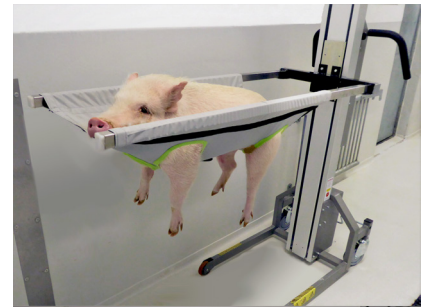


As there was an electric, height adjustable table in the facility a frame was custom made to fit this device. The actual sling is quite stretched in the frame and a cut out was made at the head end, to such a degree that the manubrium sterni of the Minipig is exposed when it hangs in the sling. Once the Minipig is placed in the sling, the head is supported by an assistant and the table can be raised to give easy access to the lower neck. The Minipig head is lifted so the neck is nicely stretched and exposed. Sitting in a low chair the technician can now obtain a blood sample.



To have an alternative we fitted an industrial lift with forks that can carry the slings. The forks can be lowered to the ground to have the option to train the Göttingen Minipigs to step into the sling by itself and to be raised to a comfortable working position.

The sling was modified that the head is lifted and an extra hole was placed centrally, halfway between the openings for the front legs. The raised head makes it easier to palpate the anatomy of the neck through the central opening and find the right site for puncture. The hole was fitted with a flap that covers the opening while placing the Minipig. This helps preventing the Minipig to put its snout through the hole. When the flap is opened, the site for sampling is exposed.



Results, Conclusion and Discussion

We could come up with two methods that work flawlessly in most cases if the Minipigs are properly acclimatized. The Minipigs are calm, do not appear to be stressed and no vocalization was observed. Less manpower than usual was required and we were able to take a sample every 2 minutes with time to spare.

The systems were tested on males and females ranging from 5 to 35 kg. It proved to be particularly successful in the range >10kg, however after a certain size it is advised that two persons lift and place the Minipig in the sling.

Minipigs in the low weight range are generally a bit more nervous or unsettled and might be restrained by a sitting technician (picture on the left) or in the traditional method on the V-bench.

Göttingen Minipigs adapt very well to the sling and require minimal training for that procedure. However it is imperative to take your time when placing the Minipig in the sling. You need to give this procedure the utmost attention when you do it the first time with the Minipig because the outcome of this first attempt will define the character of all the subsequent sling placements.



The technique of the actual sampling needs to be adapted to the new position. Practice has shown that technicians adapt quickly to the new angle of view and even not so experienced technicians have no problems obtaining a blood sample with this type of restraint. The feedback from the technicians is positive throughout, they experience less stressed animals and need less manhours. Over all it is a true contribution to animal welfare and is a refinement in the sense of the three R's.

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