CONSIDERATIONS FOR RUMINAL CANNULATION SURGERY

Einar Vargas-Bello-Pérez, Miguel Angel Quiroz-Martínez, Arturo Olguín y Bernal

1Animal Sciences, The University of Nottingham, Loughborough, UK, 2Departamento de Producción Animal: Rumiantes, Universidad Nacional Autónoma de México, Distrito Federal, Mexico

The cannulation surgery of different digestive compartments is a common method used in the study of digestive function. Cannulation is needed to maintain an open fistula and to minimize its interference with normal digestive functions. Experimental objectives will influence the type of cannulae and their placement. Cannula size selection will vary depending on the size of the host animal and the research needs (e.g. it is preferable to start approximately with a 7-8 cm diameter cannula, replacing it to a 10-11 cm as needed until rumenotomy wound expands to its final shape). The surgical procedure should be performed with the host animal in a standing position using appropriate aseptic techniques (e.g. use of povidone-iodine solution). Sedation and use of analgesics (e.g. thiopental, ketamine, xylazine, xylazine / acepromazine, detomidine, medetomidine, romifidine) and local anaesthetics (e.g. lignocaine) must be performed with extra care to avoid dorsal recumbency and prevent the proper placement of the cannula. It is noteworthy to mention that the fistulated region, method of fistulation and adhesions are related to the rumen internal pressure and passage rate of feed. The impact on the host animal is mainly at the post surgical period due to the moderate discomfort caused by this procedure. Appropriate use of analgesics returns rumen function and animal behaviour to normal after recovery from anaesthetic effects. In long term, the rumenotomy hole in which the cannula resides may expand and allow the cannula to leak rumen contents, particularly when host animals are fed with highly fermentable diets. Ruminal cannulation procedures have to be cared to have a long functional life and permit convenient sampling of digesta and introduction of liquid and solid materials, including digestion bags.