Kawasaki Journal of Medical Welfare Vol.1 No.1 1995 145-153

Original Papers(None)

A Collection Method and Its Application to Biliopancreatic Exocretional Experiments on Conscious Rats

Akifumi ONO[1)], Shuji MATSUEDA[1)], Mutsuko TAKEMASA[1)], Yoshinobu MATSUMOTO[1)], Tetsuro MORITA[1)] and Hisami ONO[2)]

Department of Clinical Nutrition Faculty of Medical Professions Kurashiki, 701-0194, Japan[1)]

Department of Nursing Faculty of Nursing Niimi, 718, Japan[2)]

(Accepted 1995-10-30 00:00:00+09)

Key words:biliopancreatic juice, gastric cannula, conscious rat, pancreatic exocrine mechanism, biliopancreatic exocrine apparatus

Abstract

A biliopancreatic exocrine apparatus was attached to a conscious rat without housing it in a Bollman type cage. The rat was allowed exercise and free access to solid food and water in an individual stainless steel cage in a room lit automatically from 08:00 to 20:00hr. The rat survived for several days with this apparatus and it was possible to collect biliopancreatic juice at any time. The apparatus was constructed using a biliopancreatic silastic fistula, a gastric cannula, a dorsal cover made from a disposable syringe and tubing available at any physiological laboratory. To test the viability of the apparatus, the rat's pancreas was indirectly stimulated by introducing various nutrients via the gastric tube. In multiple tests, the same nutrient elicited a consistent response from the pancreas but casein stimulated more strongly than starch.
This system using rats can be useful for several other experiments such as observing the pancreatic exocrine response to other stimulants. Moreover, it is useful due to low cost and because the technique is simple, many rats can be prepared simultaneously.