

Microbiological Analysis on Anatomical Specimens of Cats for Use in Veterinary Surgery

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Abstract : There are several fixative and preservative solutions for use on cadavers, many of them using formaldehyde as the fixative or anatomical part preservative. In some countries, such as Brazil, this toxic agent has been increasingly restricted. The objective of this study was to microbiologically identify and quantify the key agents in tanks containing 96GL ethanol or sodium chloride solutions, used respectively as fixatives and preservatives of cat cadavers. Eight adult cat corpses, three females and five males, with an average weight of 4.3 kg, were used. After injection via the external common carotid artery (120 ml/kg, 95% 96GL ethyl alcohol and 5% pure glycerin), the cadavers were fixed in a plastic tank with 96GL ethanol for 60 days. After fixing, they were stored in a 30% sodium chloride aqueous solution for 120 days in a similar tank. Samples were collected at the start of the experiment - before the animals were placed in the ethanol tanks, and monthly thereafter. The bacterial count was performed by Pour Plate Method in BHI agar (Brain Heart Infusion) and the plates were incubated aerobically and anaerobically for 24h at 37°C. MacConkey agar, SPS agar (Sulfite Polymyxin Sulfadizine) and MYP Agar Base were used to isolate the microorganisms. There was no microbial growth in the samples prior to alcohol fixation. After 30 days of fixation in the alcohol solution, total aerobic and anaerobic (<1.0 x 10 CFU/ml) were found and *Pseudomonas* sp., *Staphylococcus* sp., *Clostridium* sp. were the identified agents. After 60 days in the alcohol fixation solution, total aerobes (<1.0 x 10 CFU/ml) and total anaerobes (<2.2 x 10 CFU/mL) were found, and the identified agents were the same. After 30 days of storage in the aqueous solution of 30% sodium chloride, total aerobic (<5.2 x 10 CFU/ml) and total anaerobes (<3.7 x 10 CFU/mL) were found and the agents identified were *Staphylococcus* sp., *Clostridium* sp., and fungi. After 60 days of sodium chloride storage, total aerobic (<3.0 x 10 CFU / ml) and total anaerobes (<7.0 x 10 CFU/mL) were found and the identified agents remained the same: *Staphylococcus* sp., *Clostridium* sp., and fungi. The microbiological count was low and visual inspection did not reveal signs of contamination in the tanks. There was no strong odor or purification, which proved the technique to be microbiologically effective in fixing and preserving the cat cadavers for the four-month period in which they are provided to undergraduate students of University of Veterinary Medicine for surgery practice. All experimental procedures were approved by the Municipal Legal Department (protocol 02.2014.000027-1). The project was funded by FAPESP (protocol 2015-08259-9).

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