Abstract

This is the first report dealing with the localisation and morphology of the proximal (jugular) ganglion in the pig. Six 3 months old pigs of both sexes were used in this study. Tissues were stained with three histological methods: Klüver-Barrera counterstained with Cresyl violet, Haematoxylin-eosin and Mayer's haematoxylin. The localisation and morphological features of the ganglion and ganglionic neurones were described and discussed.

Introduction

The vagus nerve is the mixed cranial nerve, branchiogenous of the fourth and fifth branchial arch (Sobociński 1985). It contains three kinds of nerve fibers: motor, sensory and parasympathetic. Motor-neurones are located in the caudal part of the ambiguous nucleus within the brain stem. Parasympathetic nerve fibers originate from the parasympathetic nucleus of the vagus nerve. Sensory neurons are found within sensory ganglia (proximal and distal). The proximal ganglion called also the jugular or superior (in humans) ganglion is situated in the area of the outlet of roots of vagus group from the skull cavity, within the jugular foramen in humans (Lang 2001, Tummala et al. 2005), carnivores and ruminants (Sobociński 1985, König and Liebich 2004) or the sphenotic foramen in pigs and horses (Sobociński 1985, König and Liebich 2004). This ganglion branches into: meningeal branch supplying the pachymeninx and auricular branch which supplies the skin of the ear auricle (Sobociński 1985). In available literature there is some data on the localization and morphology of the distal ganglion of the vagus nerve in humans (Lang 2001, Tummala et al. 2005), pigs (Pospieszny 1993), sheep (Pospieszny and Brużewicz 1998) and cattle (Adamski et al 2007), but there is no data dealing with the morphology of the proximal ganglion of the vagus in the pig, therefore we decided to study this subject.

Materials and Methods

Six 3 months old pigs of both sexes were used in this study. Animals were given azopromasine (Stresnil; i.m. 10 mg/kg of body weight) 30 min. before the main anaesthesia and then deeply anaesthetized with thiopental sodium (Thiopental; i.v. 30 mg/kg of body weight). Then the animals were perfused transcendally with 4% paraformaldehyde in phosphate buffer (0.1 M, pH 7.4) and the vertebral canal and skull were opened. Meninges were cut open and roots of the spinal and cranial nerves were exposed. The trunks of IX, X, XI and XII cranial nerves with their roots were then removed, rinsed in PB and transfer-