The ophthalmic branch is the smallest of the three divisions of the trigeminal nerve, purely sensory and innervates the ciliary body, the cornea and the iris; to the lacrimal gland and conjunctiva (Shankland, 2001). Anaesthesia of these nerves is sometimes necessary for eyelid and conjunctival biopsies and other minor surgical procedures (Michau, 2005). Furthermore, this nerve blockade is preferred for some minor ophthalmic surgeries in the eye and/or the upper eyelid (Badawy and Eshra, 2015). The cornual nerves are involved in the analgesic preferred technique for dehorning in ruminants (Hall et al, 2001).

The ophthalmic division of the trigeminal nerve is well described in other species, namely, equine, bovine and canines (Levine et al, 2008) but the clinical anatomy of this nerve in dromedaries and ovine is scarcely reported.

This study was aimed to describe the topographic anatomy and distribution pattern of ophthalmic division of the trigeminal nerve in 5 dromedary camels and 3 sheep. In both species, the origin and the primary branches of the ophthalmic nerve were similar, but they differed in the pattern of distribution. The primary branches included the zygomaticotemporal nerve, frontal nerve, frontal sinus branch and nasociliary nerve. The study would help deciding the sites of this nerve block in these species.

Keywords: Camel, cornual nerve, frontal nerve, infratrochlear nerve, ophthalmic nerve, sheep, supraorbital nerve

ABSTRACT

The aim of this study was to describe the topographic anatomy and the distribution pattern of ophthalmic division of the trigeminal nerve in 5 dromedary camels and 3 sheep. In both species, the origin and the primary branches of the ophthalmic nerve were similar, but they differed in the pattern of distribution. The primary branches included the zygomaticotemporal nerve, frontal nerve, frontal sinus branch and nasociliary nerve. The study would help deciding the sites of this nerve block in these species.

Materials and Methods

This study was performed in accordance with the ethical guidelines approved by the Institutional Animal Care and Use Committee of the Faculty of Veterinary Medicine, Benha University, Egypt. The study was conducted on 10 heads from apparently healthy mature males (5 camels, 3 sheep) which were obtained immediately after slaughter from Toukh and Qalioube abattoir, Egypt. One camel skull was used for demonstrating the foramina of the nerve exit in this species. Each head was frozen at -18°C, until these were used for this study. Nomenclature used in this study was written according to the Illustrated Nomina Anatomica Veterinaria (Schaller, 2011) and Smuts and Benzuidenhout (1987).

Results

Ophthalmic nerve

Origin and distribution: In camels and sheep, the ophthalmic nerve originated intracranially (at level of foramen lacerum) from the trigeminal ganglion in a common trunk with the maxillary nerve (Fig 1a, b). It exited the cranium through the orbitoturbundum foramen (Fig 1a, b). In camels, it was divided immediately after its origin within the cranial cavity to give its primary branches (Fig 1a). However, in sheep, the division occurred just at the foramen of exit (orbitoturbundum) (Fig 1b). In the two species, the ophthalmic nerve gave off