Cranial Nerves

Brain Behav Evol 1993;42(suppl 1):5

Conventions

In the process of our study, we developed our abbreviations by adopting certain nomenclatural and illustrative conventions. Cranial nerves usually are described according to this descending hierarchy: trunk, ramus, ramule, element, division, branch. It is not traditional or practical in all cases to adhere strictly to the implications of this hierarchical scheme. For instance, some large rami may be described as giving off several small ramules for neuromasts (e.g., the superficial ophthalmic ramus of the anterodorsal lateral line nerve). In other cases, we describe the divergence of a ramus into two more or less equally sized ramules, even though both ramules may remain relatively large (e.g., d-man and v-man, the dorsal and ventral ramules of the mandibular ramus of the trigeminal nerve, respectively).

Nerves are abbreviated and figured as follows:
1. Abbreviations for nerves start with capital letters or the Roman numeral of the nerve (e.g., Pr is the profunda! nerve; IH is the oculomotor nerve). These abbreviations are never combined with any modifiers but, if a modifier is needed then it is set off by a space (e.g., p DC is the pharyngeal ramus of the glossopharyngeal nerve).
2. Ganglia are designated by a lower case 'g' before the abbreviation of the nerve (e.g., g Pr).
3. Where there is an obvious anastomosis (such as the fusion of the buccal ramus of the anterodorsal lateral line nerve with the maxillary ramus of the trigeminal nerve) or what we interpret as a phylogenetic combination of structures (such as the fusion of the ganglion of the anteroven-tral lateral line nerve with the ganglion of the facial nerve), we represent this with a ‘+’ sign (for these two examples, buc+max and g AV+VII, respectively).
4. All rami are named and indicated in the figures, and most ramules discussed in the text are named or numbered and included in the figures.

5. Names of nerves are anglicized (e.g., abducent nerve) except when specific reference is made to a previous study. Other conventions for coding and labeling the illustrations are as follows:

1. The main reconstruction (fig. 2) is color coded to show nerve components: red, motor; blue, lateral line; green, somatic sensory; and yellow, visceral sensory.

2. In both reconstructions (fig. 2, 3), circles filled with the appropriate color indicate the extent of each ganglion.

3. In both reconstructions where the course of a nerve would be obscured in dorsal view by other structures, the nerve is shown with dashed lines.

4. In the diagrams of eight levels through the specimen (fig. 4-11), light gray indicates cartilages and bones, darker gray indicates muscles, and black indicates nerves.

It was not our intent to document all cranial structures in the pup, but many must be mentioned in describing the courses of the nerves. For cranial bones, muscles and cartilages, we adopted the nomenclature developed by Millot and Anthony [1958,1965] and Millot et al. [1978]. For the cranial sensory canals we revised Hensel's [1986] nomenclature based on our study of the lateral line canals in the pup and additional adult specimens (fig. IB).

A black bar on the longitudinal axis of the main reconstruction (RC 732 to RC 839, fig. 2) indicates the 'gap', the region in which only every tenth section was available.