limits of contamination both products migrated as authentic myo-inositol.

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PHYSIOLOGY

Laryngeal Articular Reflexes

In a previous communication[1], we suggested that mechanoreceptor nerve endings in the capsules of the laryngeal joints might contribute to the reflex regulation of the activity of the intrinsic laryngeal muscles; and we there described our identification of the appropriate innervation of the laryngeal joints. Further physiological studies have now specifically demonstrated articular reflex influences on the intrinsic laryngeal muscles from the afferent nerves supplying the cricothyroid and crico-arytenoid joints.

The capsules of these joints have been found to contain large numbers of rapidly-adapting Type II mechano-receptor end-organs[2], similar to those in the limb joints[3,4]. These receptors are innervated in clusters by medium-sized (6μ–10μ) myelinated afferent fibres from the laryngeal articular nerves[1,2]. In addition, the laryngeal joint capsules contain plexuses of unmyelinated pain-sensitive Type IV nerve endings[3,4], supplied from smaller afferent fibres (2μ or less in diameter) in the articular nerves.

In ten cats, anæsthetized with pentobarbitone, the articular nerves supplying the cricothyroid and crico-arytenoid joints have been electrically stimulated directly with single rectangular pulses of varying amplitude and duration. The nerves were dissected out *in situ* (without dividing them), and lifted on to bipolar stimulating electrodes, under a stereoscopic operating microscope. The nerves, and the other exposed tissues, were submerged in a pool of warm mineral oil. The animals were kept warm on a thermostatically regulated operating table.

Contractions of the exposed laryngeal muscles were observed through the microscope. In some instances, movements of the vocal cords were inspected through a laryngeal speculum.

The stimulus threshold intensity required for the production of the least visible twitch in one or more laryngeal muscles was determined for each of the nerves supplying the cricothyroid and crico-arytenoid joints. This value was compared, in each experiment, with the thresholds (for contraction of the laryngeal muscles) of mucosal afferent and laryngeal motor nerves. The effects of supra-liminal stimulation of the laryngeal articular nerves (at increasing stimulus intensities) on laryngeal muscle activity, swallowing reflexes and respiratory activity were also noted. All responses were tested at various phases of the spontaneous respiratory cycle.

Low-intensity stimulation of each articular nerve consistently produced brief twitches in either abductor or adductor muscles of the larynx, or in both. The threshold for such responses was higher than that of the motor nerves to the same muscles, and much lower than that of nerves supplying the laryngeal mucosa. High-intensity stimulation of the articular nerves produced pain reflex responses (similar to those evoked by comparable stimulation of mucosal afferent nerves), involving laryngeal spasm, hyperpnoea, tachycardia, dilatation of the pupils, and generalized limb and swallowing movements. The effects of laryngeal articular nerve stimulation were unaltered by section of the nerves distal to the point of stimulation, but were totally abolished by division of the nerves at any point between the stimulating electrodes and their junction with the main laryngeal nerve trunks.

These findings indicate that afferent impulses traversing laryngeal articular nerves are capable of evoking reflex contraction of the intrinsic laryngeal muscles. The relevant nerve fibres have a lower threshold (and are, therefore, larger) than mucosal afferent fibres, but a higher threshold (and are, therefore, smaller) than motor fibres to the laryngeal muscles. Some high-threshold (and hence small diameter) pain afferent fibres are also present in the articular nerves. The medium-sized reflex afferent fibres in the laryngeal articular nerves are probably mechanoreceptor afferents similar to those in the articular nerves of the limbs[4], and are most likely derived from the clusters of Type II receptors that are present in the capsules of the laryngeal joints[1,2]. Electromyographic investigations of these laryngeal articular reflexes are now in progress to define their characteristics more precisely.

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Facilitatory Effect of High Protein Intake on Subsequent Consumption of an Amino-acid Imbalanced Diet

It is now well known that at low levels of dietary protein, imbalances and excesses in the amino-acid content of the diet depress growth and food intake in rats. Increasing the casein-level from a value of 9 to 18 per cent eliminates the depression of appetite and the retardation of growth resulting from ingestion of a diet containing 3 per cent *l*-leucine[1]. In the work recorded here, we have examined the possibility that the higher basal protein level may act in part to increase the generalized capacity of the organism to metabolize and dispose of excess amino-acid loads.

Groups of five rats (female albino, Charles River strain) were fed *ad libitum* on each of the 'pre-fed' diets for a period of six days: (I) control, 'low protein' semi-synthetic diet (*L*1) containing 9 per cent casein supplemented with 0·3 per cent *dl*-methionine and 0·1 per cent *dl*-tryptophan; (II) leucine 'imbalanced' diet (*L*5) containing 5 per cent *l*-leucine substituted for sucrose in *L*1; (III) 'balanced' diet (*L*6) containing 0·4 per cent *dl*-isoleucine and 0·3 per cent *dl*-valine substituted for sucrose in *L*5 (the 'antagonism' between leucine and isoleucine plus valine has been shown to result in normal growth on such a diet[2]); (IV)–(VII) semi-synthetic protein diets (*P*20–*P*80) containing 20, 40, 60 and 80 per cent casein (with sucrose added to 90·75 per cent). At the seventh day all groups were placed on diet *L*5. Food consumption was determined daily and body-weights were recorded at 3-day intervals. From these results, we were able to evaluate the effects of 'pre-feeding' various quantities of protein on the subsequent consumption of a diet containing an excess of a single amino-acid. Table 1 gives three-day averages of the daily food intake