A QUANTITATIVE STUDY ON THE HISTOLOGY OF THE NORMAL HUMAN SUBMANDIBULAR SALIVARY GLANDS

A.S. Attele*, N.R. Jayasinghe**
and B.R.R.N. Mendis*
*Dept. of Oral Pathology, University of Peradeniya.
**Dept. of Anatomy, University of Peradeniya.

Four, submandubular salivary glands were obtained from 23,24,29 and 40 year old subjects at post mortem. Blocks of tissue, each measuring 5x5x5 mm^3 were obtained from ten representative sites of each gland. Five sections, 5 μm in thickness from each block and a total of 50 sections from each gland were stained with Haematoxalin and Eosin and examined with the light microscope. A 25 point eyepiece graticule was used to perform a stratified random point count (1). In this technique, the fraction of the total points coinciding with any histological component is equivalent to the volumetric proportion of that component in the whole gland (2). The mean, with the associated standard error of 10 histological parameters were calculated.

This investigation shows that the parenchyma of the submandibular gland has a proportionate volume of 78%. The non-secretory component which consists of connective tissue, vascular tissue and adipose tissue occupied mean volume fractions of 17% $\pm$ 3.9, 2.3 $\pm$ 0.47 and 2.2% $\pm$ 0.38 respectively. Subdivision of the parenchymal component into acini and ducts shows that the acini had a larger proportional volume of 68% whereas that of the ducts was 10%. The majority of acini were serous and occupied a mean volumetric ratio of 60% $\pm$ 7.3. The mucous acinar mean proportional volume was found to be 6% $\pm$ 1.89. The crecentric serous demilunes were considered separately from the spherical serous acini and these had a smaller volume ratio of 1.5% $\pm$ 0.5. Of the duct component, the striated ducts had the largest mean proportional volume of 8% $\pm$ 1.1. The excretory ducts were next in order with 1.5% $\pm$ 0.3. The intercalated ducts had a mean volume ratio of 0.5% $\pm$ 0.2. In accordance with descriptive studies previously reported, chronic inflammatory cell infiltrates were found as areas of focal lymphocytic adenitis (3) and their mean proportional volume was 0.1% $\pm$ 0.05.

References

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