Myxocytes in human accessory parotid gland

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Introduction

A cluster of small glands which exist away from the main body of the parotid gland and along the parotid duct is called accessory parotid gland. The existence of this gland has long been known and many detailed reports have been made on its percentage of incidence and morphological classification. The author made a follow-up study on cadavers examined during dissection practice for students and obtained additional knowledge1).

Generally, the human parotid gland is regarded as an aggregation of serous cells only. Recently, however, mucoepidermoid tumors which occur primarily in the salivary gland have frequently been found occurring in the parotid gland and accessory parotid gland. Therefore, interest has been shown pathologically as well as clinically on the presence or absence of myxocytes in the two glands and on the mechanism of their occurrence2-7). However, histologic investigation of normal accessory parotid glands, particularly of the properties by age of acinus cells and ductual epithelium, has not yet been made sufficiently.

In the present study, properties of the acinus cells constituting the accessory parotid gland of the aged were investigated and compared with those of other ages and of the parotid gland.

Materials and Methods

The accessory parotid glands used for this study were obtained from 15 cadavers (aged 65–92) for dissection practice for students at Fukuoka Dental College in 1983. The accessory parotid glands were removed with the main excretory duct and Stensen's duct intact from each cadaver. The specimens were refixed in 10% neutralized formaldehyde or Bouin's fluid. Then, paraffin sections were prepared by the routine method, stained with hematoxylin-eosin, Azan (Cason's method), or mucicarmine, and observed.

Results and Discussion

On the whole, the histologic structure of the accessory parotid gland differs little from that of the parotid gland and is divided into individual lobules by connective tissue. Each lobule contains many fat cells in addition to acinus cells. The parotid gland is generally known to increase fat cells with age after 25 years of age. Since the subjects in the present study were of advanced ages, a similar tendency appeared to be shown for the accessory parotid gland. In 3 of the 15 specimens which were sectioned, acinus cells which stained lightly with H.E and Azan staining were observed. These light-stained cells were larger than the serous cells and the nucleus was compressed toward the base. These cells clearly presented the morphology of myxocytes (Figs. 1 and 2). In every case, a typical Ebner's demilune was observed (Fig. 2). Staining of these cells with mucicarmine showed strong positive reaction. Also in the ductual epithelium, globlet cells which showed positive reaction were observed. The
contents in the duct also showed strong positive reaction in part (Figs. 3 and 4). Thus, the morphology and coloration (reaction) of the acinus cells found in the accessory parotid gland indicated without doubt the existence of myxocytes. In the parotid glands of fetuses and newborns, existence of cells which show mucous reaction has long been known\(^8\).\(^9\). Of late, Takeishi\(^10\), Iwata et al.\(^11\) and Komori et al.\(^12\) have described that appearance of myxocytes in the parotid gland is not rare. Tumors which occur primarily in the salivary gland, particularly mucoepidermoid tumors, are said to occur frequently in the parotid gland and these instances have attracted attention pathologically as well as clinically. Since such a tumor will not occur unless mucous cells are present in the parotid gland, it may have to be presumed that there are cases where acinus cells are not necessarily composed of serous cells alone but have some mucous cells intermingled. Since the accessory parotid gland pullulated from part of the parotid gland at the time the parotid gland was generated, the properties of the accessory parotid gland are regarded as the same as those of the parotid gland. If mucous cells are to appear occasionally in the parotid gland as described before, it is natural for them to appear in the accessory parotid gland also. However, there has been no report of appearance of mucous cells in the accessory parotid gland. The findings by the authors are probably the first of their kind.

Literature reports of observing a histologic state in which some of the serous cells in the parotid gland changed into mucous cells as a senile change. If so, the higher the age of a subject, the more mucous cells should appear. However, the three specimens studied by the authors did not show any indication suggestive of age association.

Tumors occurring primarily in the accessory parotid gland have also been reported lately. In children also, the incidence of mucoepidermoid tumors is said to be frequent next to pleomorphic adenomas\(^13\). Further study on younger subjects is necessary to clarify whether the matter of appearance of myxocytes coincides with generation or with growth stages of the parotid gland and accessory parotid gland.

**Conclusions**

Accessory parotid glands obtained from 15 cadavers (aged 65–92) for dissection practice for students were examined histologically and the following conclusions were obtained. 1. In 3 of 15 specimens, acinus cells which stain lightly with H.E and Azan were observed. These cells were larger than the serous cells and the nucleus was compressed basally. 2. These cells when stained with mucicarmine showed strong positive reaction and were therefore regarded as myxocytes. 3. All three specimens showed a typical Ebner's demilune.

**References**

8) Akiyoshi, Y.: Histologische Studien der Grandula Parotis mit besonderer Berücksich-


Explanations of figures

Figs. 1-4 Light micrograph of human accessory parotid gland, showing mucous and serous acini, several intralobular striated ducts, and numerous fat cells.

Fig. 1 Female aged 85 years. H.E stain. ×75

Fig. 2 Myxocytes forming demilunes. Female aged 85 years. Azan (Cason’s method) stain. ×150

Insert: Magnification of Ebner’s demilunes. H.E stain. ×300

Fig. 3 Female aged 92 years. Mucicarmine stain. ×150

Fig. 4 Male aged 77 years. Mucicarmine stain. ×300

D: duct  G: globlet cell