Editorial

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Ultrasonography of the salivary glands: what's new?

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This issue of Medical Ultrasonography recalls to attention an often overlooked issue: the ultrasonographic assessment of the salivary glands. With almost 500 papers indexed in PUBMED since 2002, apparently this topic received a fair amount of attention. The legitimate question arises whether ultrasonography (US) has anything new to say and what are the novelties.

It is now of unanimous acceptance that US is the imaging method of first choice in assessing lumps in the area of the salivary glands, as well pointed out in this issue's papers. On the other hand, differentiating between benign and malignant as well as between pathologic types of benign salivary gland tumors by means of US is yet a goal to achieve. But US has proven to be valuable in nontumoral disease of the parotid glands, as well.

In inflammatory disease, US reveals abscess formation and offers guidance for puncture. US allows for differentiation between obstructive and nonobstructive sialadenitis and rare occurrences such as chronic sclerosing sialadenitis (Kuttner's disease) or sialocele have been described.

US assessment of Sjogren's disease received massive attention, lately. Since US has proven to be more sensitive than sialography in diagnosing this entity, it is nowadays considered to be a valid alternative and competes for the position of golden standard. Textural inhomogeneity scores have been developed and textural analysis of parotid parenchyma proved to represent a good alternative to sialography. Doppler assessment of spontaneous or induced hyperemia added extra diagnostic criteria.

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Stones as small as 0,4 mm can be revealed and the accuracy of stone localization exceeds 90%. Furthermore, salivary stimulation with ascorbic acid improves even more stone detection.

The US appearance of rare salivary gland tumors has been reported: myoepithelial carcinoma, oncocitic sialolypoma, sebaceous lymphadenoma, oncocytoma associated adenolymphoma, reticular perineurinoma, extrasalivary Stenon duct carcinoma, schwannoma, primary lymphoma, metastases and the list may go on.

Salivary involvement in peculiar disease such as sarcoidosis, tuberculosis or hydatid cyst has also been reported. US proved to be useful in diagnosing pediatric salivary gland disease, anomalies as well as pseudotumoral masses induced by unilateral maseter hypertrophy or milohioid muscle hernia.

Lately, peculiar applications of salivary US emerged. Salivary gland biometry proved to be useful in the follow-up of feeding disorders (anorexia / bulimia nervosa). US guided intrasalivary injection of botulinic toxin represents, nowadays, a novel and efficient method for the treatment of drooling syndrome, whether sialorrhea is encountered in children or in cerebral palsy.

Returning to tumors, US represents a very effective means to guide needle biopsy. Fine needle aspiration has been considered, for a long time, the method of choice. However, recent studies show that core needle biopsies are to be preferred since they yield a much higher diagnostic rate. Suspicious neck lymphadenopathy is also best assessed by means of US and puncture guidance is offered, whenever needed.

Since, as shown by recent studies, neither CT nor MRI are superior to US in differentiating benign from malignant tumors of the salivary glands, US remains the method of choice due to its many advantages. The papers in this issue outline and depict clearly the usefulness of US in differentiating between benign tumors of the sali-

vary glands. It is, however, not easy to tackle with the malignant tumors since, even in large maxillo-facial surgery centers, they are of rare occurrence. In fact, most of the salivary gland tumors develop in the parotids. On the other hand, the larger the gland, the lower the incidence of malignancy. In other words, a submandibular gland tumor has higher odds of being malignant, compared to a parotid one.

So, where do we stand? Is this all US can offer? Are we stuck in guessing or, at best, assuming? Definitely, not! Newly emerging US modalities may add to the diagnostic armamentarium. One recently published study suggests that contrast enhanced US may contribute to differentiating pleomorphic and Warthin's adenomas by means of inflow curve analysis [1]. One of the papers in this issue (the first published, to the best of our knowledge) deals with the potential contribution of sonoelastography in salivary gland disease [2].

In the end, there are reasonably good reasons to state that US of the salivary glands has not only acquired a firm position in the diagnostic algorithm but also represents a good research path to go on.

References:

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