

Case Report

Infarction of pleomorphic adenoma of parotid gland: a rare pathological phenomenon

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Abstract: An extremely rare case of infarction of pleomorphic adenoma in a 32 years' old male is reported. There was no history of fine needle aspiration biopsy for the tumor, instead, ichthammol ointment has been once transiently prescribed for external use when the patient felt pain and swollen in the parotid region. Partial parotidectomy was performed. The gross anatomy of the tumor presented a yellow nucleus at the center of the tumor, histological observation demonstrated characteristics of infarction which should be differentiated from that of a malignancy. Neither recurrence nor postoperative complication took place during the one year follow-up.

Keywords: Infarction, pleomorphic adenoma, parotid gland

Pleomorphic adenoma (PA) is the most common neoplasm of the parotid gland, generally presenting as a slowly growing, well-circumscribed, painless mass. A short period of rapid growth associated with pain may present in occasional cases. PA is solid in general, but can also rarely present with cystic degeneration or hemorrhage. Spontaneous infarction and fine needle aspiration (FNA)-induced infarction especially the former has been rarely reported in literature. Here we report such an extremely rare pathological phenomenon in a PA case without FNA history.

A 32 years old male was admitted to the hospital because of a lump in the right parotid gland for three years. It was asymptomatic till 3 months before the admission. At that time, he felt pain and swollen in the right parotid region though obvious dermal hyperemia did not presented. Ichthammol ointment was prescribed for external use by a doctor in a community hospital. The pain and swelling gradually faded away after the ichthammol ointment was applied locally for about ten days. CT examination demonstrated a right superficial lobe mass with a rim of enhancement and low attenuation center (**Figure 1A**). Partial parotidectomy demonstrated that the tumor was encapsulated with a yellow nucleus in the center,

which looked as if a salted duck egg (**Figure 1B**). Intraoperative frozen section yielded possible PA with extensive central necrosis. Routine hematoxylin and eosin staining revealed degenerated clusters of cells and chondromyxoid matrix. Further immunohistochemical study showed tumor cells are positive for P63, CK-7, SMA, S-100 and negative for desmin, confirmed the diagnosis of PA (**Figure 1C, 1D**). Neither recurrence nor postoperative complication took place during the one year follow-up.

Infarction is tissue death or necrosis caused by a local lack of oxygen, due to an obstruction of the tissue's blood supply. The common organs or tissue associated with infarction include heart, brain, spleen, lung, breast, limb and bone. Infarction of thyroid gland tumor has been well-documented while Infarction of PA of parotid gland following FNA has been rarely reported [1, 2]. Spontaneous infarction of PA has remained as an extremely rare entity in the literature and it's uncertain in etiology [3]. Infarction is usually considered to be an ominous sign, suggesting malignant transformation, particularly in lesions that have had no prior manipulation such as FNA [4, 5]. On the other hand, if the FNA specimen is yielded from

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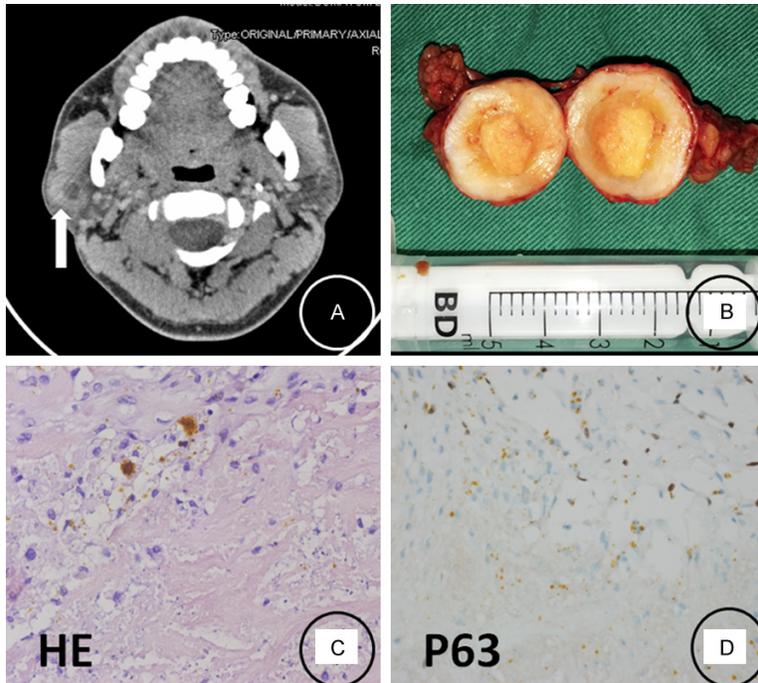


Figure 1. CT, gross anatomy and histopathological results CT demonstrated a parotid tumor with a rim of enhancement and low attenuation center (A), the tumor was encapsulated with a yellow nucleus in the center, just like a salted duck egg (B), degenerated clusters of cells with small nucleus and chondromyxoid matrix (C, H&E, $\times 400$), tumor cells with P63 positivity (D, Immunohistochemical staining, $\times 400$).

the necrotic zone, then abundant necrotic debris, atypical squamous cells, and small cells with dark nuclei suggestive of a carcinoma will possibly result in a misinterpretation of a malignancy. So, multiple-site sampling for both of intraoperative frozen section and postoperative routine histopathological examination is very important. In addition, when a FNA smear reveals necrotic debris and suggests a malignancy, a more accurate ultrasound-guided aspiration shall be performed to avoid repeated sampling in the preceding aspiration sites or necrotic zone in the tumor.

What is also special for this case is the application of ichthammol ointment. This case shall be classified as spontaneous infarction if ichthammol ointment has not been applied to the patient. Ichthammol ointment is generally believed to be capable of relieving pain or swelling for external use. It did in this case. But our concerns focus on its role in the infarction of PA. Did it accelerate or relieve the infarction process? If it can accelerate the infarction, then it worth further study as an innovative treatment modality for PA, as there is no non-

surgical treatment modality for PA in the guideline; if it can relieve the pain or swelling for PA patients, it will at least benefit the patients when they have the uncomfortable experience of pain or swelling which occasionally present among parotid tumor patients, this has not been mentioned in textbook or any guideline either. These two aspects bring new horizons for parotid tumor treatment. Further studies should be guaranteed.

Disclosure of conflict of interest

None.

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