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Fine Needle Aspiration Cytology of Carotid Body Paraganglioma

- A Case Report -

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= Abstract =

Paraganglioma is a benign tumor arising in the paraganglion system scattered throughout the body, but its cytopathologic findings arenot well known. We experienced a case of paraganglioma of carotid body diagnosed by fine needle aspiration. The patient was a 30 year-old female who suffered from the left neck mass for 3 years. The mass was 3×3cm in size without pulsation or bruit. Cytologically, the smear revealed aggregated and singly scattered tumor cells having abundant pale cytoplasm and indistinct cell borders. Their nuclei were round to oval, but enlarged nuclei were occasionally observed. The nuclear membrane was smooth with fine clumping of chromatin. Differentiation from metastatic follicular carcinoma of the thyroid gland was difficult.

Key words : Paraganglioma, Carotid body, Aspiration cytology

Carotid body paraganglioma is a rare neoplasm developing from a chemoreceptor organ most often located on the median aspect of the internal carotid artery close to the bifurcation[1, 2]. It is a clinically indolent tumor, but malignant manifestation such as metastases in regional lymph nodes[3, 4] and in distant organs[5, 6] have been described. The preoperative diagnosis of carotid body paragnanglioma is important because its close relationship to the major vessels and the cranial nerve makes perilous to manage[7]. Fine needle aspiration is a well accepted, practical way to make a tentative diagnosis in patients with head and neck mass and to guide the direction of further investigation.

We experienced a case of carotid body paraganglioma occurred in a 30 year-old female patient who suffered from the left neck mass for three years. She underwent open heart surgery due to the tetralogy of Fallot, three years before this admission. She intermittently complained of dyspnea and chest pain. Two months after the open heart surgery, she noted sudden onset of the left submandibular mass. This lesion was palpable as an adult thumb-tip sized, well movable, soft mass within the carotid triangle. Bruit or pulsation was

not present. Her blood pressure was normal.

Fine needle aspiration cytologic findings were similar to those of other reports[8]. The smear was bloody with groups of or individually scattered tumor cells (Fig. 1). Most of the tumor cells had round or oval eccentrically located nuclei and a moderate to large amount of cytoplasm (Fig. 2). The cytoplasmic border was indistinct. The nuclear chromatin was finely clumped. Occasionally, distinct nucleoli were observed. Anisonucleosis was prominent, and giant nuclei were occasionally seen. The tumor cell arrangement focally looked as "Zellballen" appearance (Fig. 3). Sometimes, acinous or folliculoid structures were found (Fig. 4). These structures and cellular morphology suggested of metastasis of thyroid carcinoma. However, in follicular carcinoma, the nuclei of tumor cells are more round, show somewhat coarse chromatin pattern and have more distinct nucleoli and even giant cells are not present, different from those of paraganglioma.

Differential diagnosis of paraganglioma includes primary and metastatic tumors such as squa-

Fig. 1. Bloody smear showing grouped and individually scattered tumor cells (Papanicolaou, ×40)

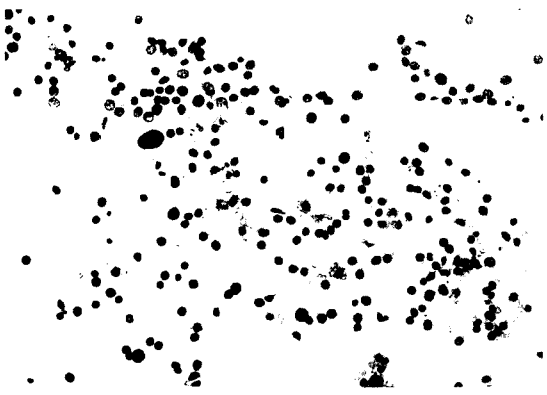

Fig. 2. Loose aggregates of tumor cells showing ill-defined cell border, abundant cytoplasm, and round to oval nuclei of eccentric location. Occasionally giant nuclei are seen (Papanicolaou, ×200).

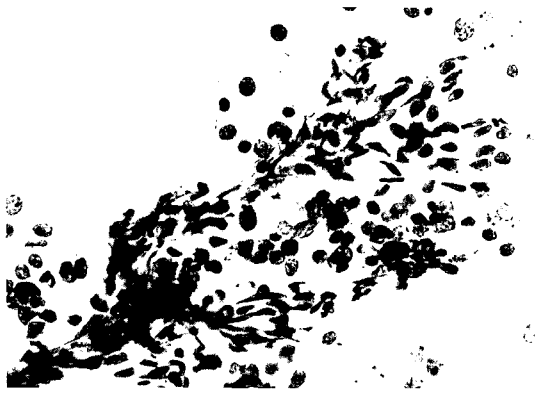

Fig. 3. Zellballen appearance (Papanicolaou, ×400).

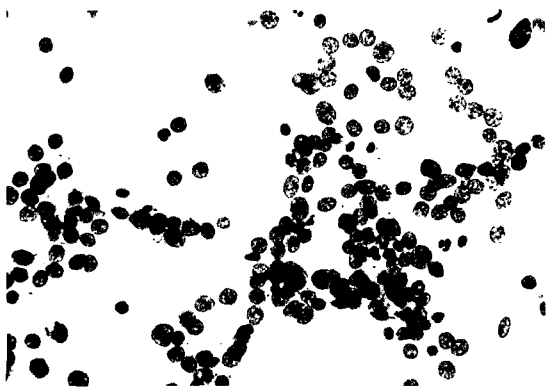

Fig. 4. Folliculoid structure (Papanicolaou, ×400).

mous cell carcinoma, adenocarcinoma, angiomatous neoplasm, malignant nerve sheath tumor and other sarcomas[9]. But in this specific case, the differential diagnosis from these lesions was not difficult. Paraganglioma is usually benign, but infrequently malignant form is encountered[3~6]. Nuclear pleomorphism is not the indicatior of the biologic activity, but presence of mitosis and malignant tumor diathesis are suggestive findings of malignant paraganglioma[9].

The excised tumor mass measured 3×3cm, and was well encapsulated. The cut surface showed yellowish white homogeneously solid appearance. The histologic finding was that of classical paraganglioma forming Zellballen appearance (Fig. 5).

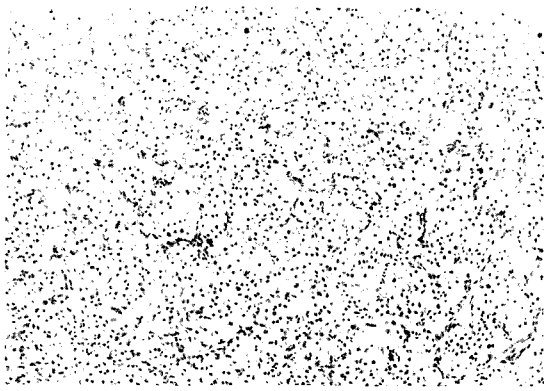

Fig. 5. The excised mass shows classical finding of paraganglioma (H-E, ×100).

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= 국문 초록 =

부신경절종의 세침 흡인 세포학적 소견
-1례 보고-

인하병원 해부병리과

김 준 미 · 조 영 채

부신경종은 주로 두경부에 발생하는 종양으로서 그 조직학적 소견은 잘 알려져 있으나 세포학적 고찰은 드문 편이다. 저자들은 30세 여자 환자의 경동맥체에 발생

한 부신경절종 1례의 세침 흡인 세포학적 소견을 보고하고자 한다. 환자는 3년간 지속된 직경 3cm의 좌측 경부 종괴를 호소하였으며 본 종괴에서 세침 흡인 세포학적 검사를 시행하였다. 종양세포는 집단이나 낱개로 흩어져서 관찰되었는데 중등도의 세포질을 가졌으며 세포경계는 불분명하였다. 핵은 둥글거나 난원형으로서 간혹 거대핵의 관찰되었다. 핵질은 미세한 응집을 보였고 때로 핵소체가 존재하였다. 본 종양은 발생위치와 세포학적 소견이 갑상선에서 전이한 여포암종과 유사하였으며 기타 두경부에 발생하는 원발성 및 전이성 병변과의 감별이 요구된다.