

# Bilateral Synchronous Mucoepidermoid Carcinoma of Parotid Gland

Meltem Akpınar<sup>1</sup>, Ozlem Unsal<sup>1</sup>, Mahmut Cankaya<sup>1</sup>, Fatih Tetik<sup>1</sup>, Berna Uslu Coskun<sup>1</sup>

## ABSTRACT:

Bilateral synchronous mucoepidermoid carcinoma of parotid gland

**Objective:** Although mucoepidermoid carcinoma is the most common malignant tumor of parotid, it is seen extremely rare in both of parotid glands synchronously. In this case report, we presented a case of 53-year-old man with bilateral synchronous mucoepidermoid carcinoma of parotid gland treated with surgery.

**Case:** A painless mass in left parotid was the major complaint of the patient. The mass located in right parotid was found incidentally by imaging. Based on cytopathology, left total parotidectomy preserving facial nerve with ipsilateral neck dissection and 5 weeks later right superficial parotidectomy was performed. In 3-year follow-up, no recurrences in parotid regions and neck was detected.

**Conclusion:** Detailed examination for parotid masses is suggested to identify possible occult synchronous tumors in contralateral side or in other salivary glands. A close follow-up is also recommended for the risk of future metachronous tumor occurrence.

**Keywords:** Mucoepidermoid carcinoma, parotid gland, bilateral, synchronous, salivary gland

## ÖZET:

Parotis bezinin bilateral eş zamanlı mukoepidermoid karsinomu

**Amaç:** Mukoepidermoid karsinom, parotis bezinin en sık görülen malign tümörü olsa da, her iki bezde eş zamanlı olarak görülmesi oldukça nadirdir. Bu olgu sunumunda, bilateral parotis bezi mukoepidermoid karsinomuna sahip 53 yaşında bir erkek hastanın tanısı, tedavi ve takip süreci tartışılmıştır.

**Olgu:** Hastanın primer şikayeti sol parotis bezindeki ağrısız kitleydi. Sağ parotis bezindeki kitle ise radyolojik görüntüleme sırasında insidental olarak saptandı. Sitopatolojik inceleme sonrası, sol tarafa total parotidektomi ve ipsilateral boyun diseksiyonu, sağ tarafa ise 5 hafta sonra yüzeysel parotidektomi yapıldı. Hastanın 3 yıllık takibinde parotis lojlarında ve boyunda rekürrens ya da nüks izlenmedi.

**Sonuçlar:** Parotis bezi tümörlerinde, diğer tükürük bezlerinin de detaylı klinik incelemesi, kontralateral bezde ve diğer tükürük bezlerinde eşzamanlı okült tümör olasılığı nedeniyle önerilmektedir. Ayrıca, metakron tümör olasılığı nedeniyle, hastaların yakın takibi önemlidir.

**Anahtar kelimeler:** Mukoepidermoid karsinom, parotis bezi, bilateral, eş zamanlı, tükürük bezi

Ş.E.E.A.H. Tıp Bülteni 2017;51(X):XX-X



Sisli Hamidiye Etfal Training and Research Hospital, Department of Otorhinolaryngology Head and Neck Surgery, Istanbul - Turkey

Address reprint requests to / Yazışma Adresi: Ozlem Unsal, Sisli Hamidiye Etfal Training and Research Hospital, Department of Otorhinolaryngology Head and Neck Surgery, Istanbul - Turkey

E-mail / E-posta: ozlemunsal@hotmail.com

Date of receipt / Geliş tarihi: March 7, 2017 / 7 Mart 2017

Date of acceptance / Kabul tarihi: April 17, 2017 / 17 Nisan 2017

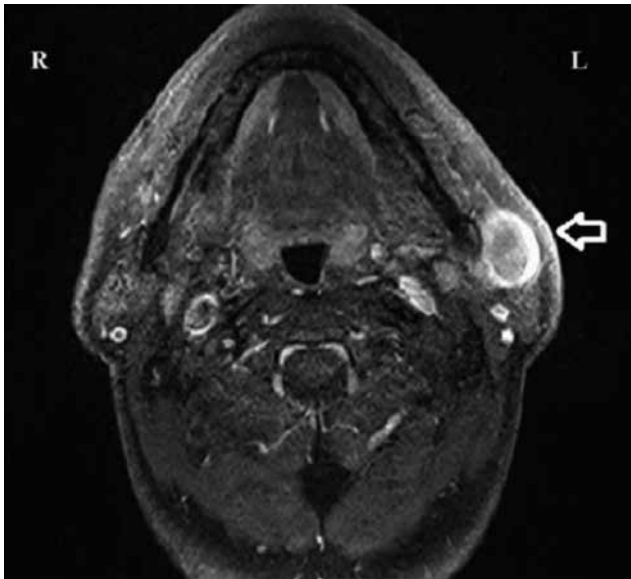
## INTRODUCTION

Mucoepidermoid carcinoma is the most common malignant tumor of the parotid gland (1,2). It usually occurs as unilateral lesion and accounts for 30% of malignant salivary gland tumors (2). Bilateral mucoepidermoid carcinoma of parotid gland is rarely encountered and may occur synchronously or metachronously (1,3-6) This paper reports a

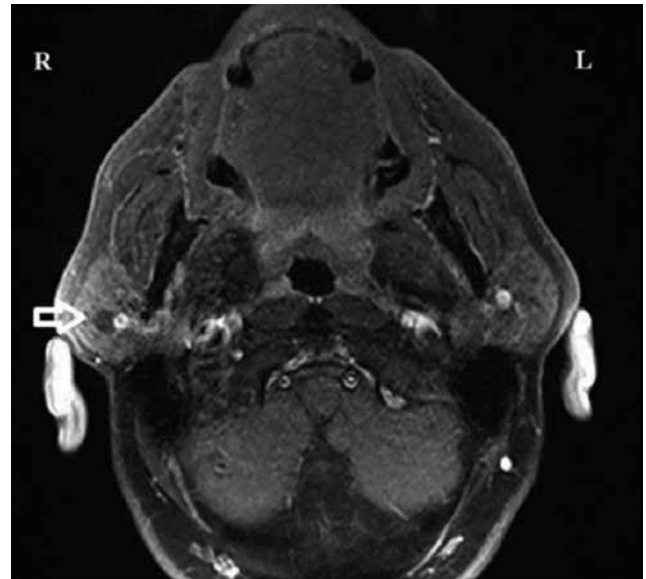
patient with synchronous bilateral mucoepidermoid carcinoma of parotid gland.

## CASE

A 53-year-old male patient was admitted to our clinic with a complaint of left preauricular painless swelling for one month. Physical examination revealed a 2x3 cm of firm, semi-mobile and painless



**Figure-1:** MRI image of left parotid mass

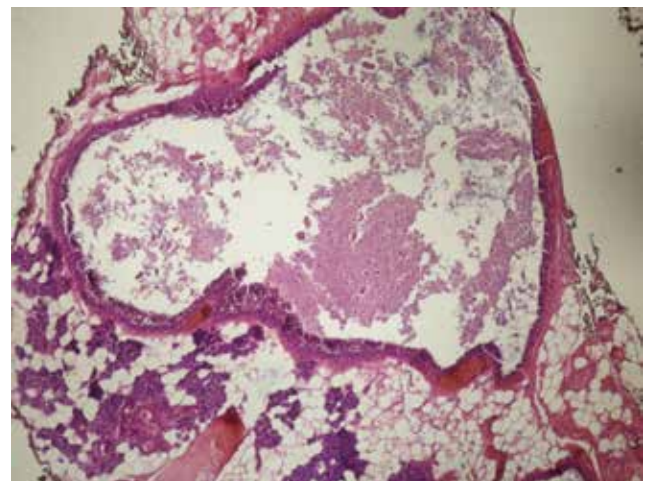


**Figure-2:** MRI image of right parotid mass

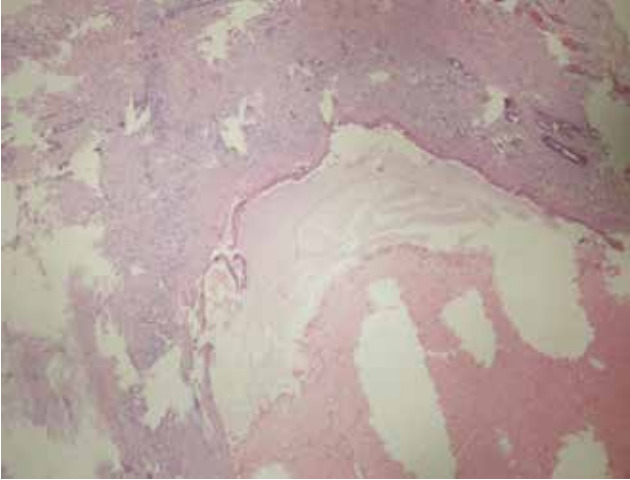
lesion in left preauricular localization. In neck ultrasonography (US), a 29x13x31 mm sized, anechoic, thick walled cystic lesion with peripheral vascularisation and echogenicity extending to the cyst lumen in left parotid gland was reported. Additionally, in right parotid gland, a thin walled, anechoic 10x7 mm, cystic lesion with indistinguishable boundaries was reported. Round shaped, 12x8 mm sized, hypoechogenic lymph nodes with indistinguishable central echogenic hilum were also detected sonographically on the left side of the neck at level 2 region. Magnetic resonance imaging (MRI) with contrast revealed a lobulated, irregular mass (32x22 mm) located in anteroinferior segment of superficial lobe of left parotid gland with areas of wide central necrosis, septation and peripheral wall enhancement and a pure cystic lesion lateral to retromandibular vein in right parotid gland (Figures-1,2). The morphology of upper jugular lymph nodes was reported as benign in MRI. Fine needle aspiration biopsy (FNAB) of left parotid gland mass was reported as mucoepidermoid carcinoma. The FNAB of right parotid gland mass was reported as cytology with lymphocytes, epithelial and myoepithelial cells.

The patient was scheduled for staged left and right parotidectomy operation. On the first stage,

left total parotidectomy was performed preserving the facial nerve. The intraoperative frozen section confirmed mucoepidermoid carcinoma and left neck dissection (level 1, 2, 3, 4) was also performed. The facial nerve functions were normal after the operation. Five weeks later, the right parotid mass was excised through superficial parotidectomy. Intraoperative frozen section of the lesion revealed low grade mucoepidermoid carcinoma. Owing to the grade of the tumor, neck dissection didn't



**Figure-3:** Histopatologic slide of intermediate grade mucoepidermoid carcinoma of left parotid gland (magnification x 200, Hematoxylin -Eosin)



**Figure-4:** Histopathologic slide of low grade mucoepidermoid carcinoma of right parotid gland (Magnification x200, Hematoxylin -Eosin)

performed. Post-operative right facial nerve functions were intact as well.

The final histopathology of left and right surgical specimens confirmed the frozen section and was reported as intermediate and low grade mucoepidermoid carcinomas, respectively (Figures-3,4). The pathology of left sided neck dissection specimen revealed non-metastatic lymphadenopathies. Further therapy was not considered due to tumor free surgical margins and negative cervical lymph nodes. The patient is on the third year of follow-up and is uneventful without evidence of recurrence and metastasis.

## DISCUSSION

Bilateral malignant salivary tumours involving parotid glands may be synchronous or metachronous (7). Synchronous tumors are defined as separate but simultaneous neoplasms and usually have tendency of same histologic type (6). Whartin's tumor, pleomorphic adenoma, acinic cell carcinoma, adenocarcinoma and myoepithelial carcinoma are among the previously reported bilateral synchronous tumors in parotid gland (6,8). The most common histopathologic type is acinic cell carcinoma among six cases reported previously in literature (9-15). Two cases of adenocarcinoma were reported (16,17). Bilateral synchronous mucoepidermoid carcinoma

of parotid gland is extremely rare. Only two cases were reported previously (1,6). Metachronous bilateral mucoepidermoid carcinoma of parotid gland is also rare and only two cases were reported previously (3,4).

US provides bilateral evaluation of parotid gland and contributes to the diagnosis of bilateral parotid masses. US and FNAB are contributory in the diagnostic work-up of parotid neoplasms (18). The malignancy detection rate of ultrasound guided FNAB for parotid tumors is remarkable whereas its diagnostic accuracy in tumor typing and grading is low (19,20). Intraoperative frozen section was reported to be superior in tumor typing and grading compared to FNAB (19,20). In present case, FNAB clarified the left parotid gland mass as mucoepidermoid carcinoma but was inconclusive for the diagnosis of right parotid gland mass.

The histologic grade is considered as the most important factor in determining the management and in predicting the outcome in parotid gland mucoepidermoid carcinoma (21,22). Mucoepidermoid carcinomas are classified histopathologically as low, intermediate and high grade. The low grade mucoepidermoid carcinomas usually mimic benign tumors but still have the potential of local invasion and distant metastasis. The cystic component less than 20%, neural invasion, necrosis, anaplasia and intense mitotic activity are the histopathologic features that reveal high grade tumor. The locoregional invasion and metastasis rate are increased in high grade mucoepidermoid carcinomas. In a previous study, five-year disease specific survival rates for low-grade, intermediate-grade, and high-grade mucoepidermoid carcinoma among 2400 patients were reported as 98.8%, 97.4%, and 67.0%, respectively (21).

The grade of tumor may not be clearly defined through intraoperative frozen section in all cases. In this case, intraoperative frozen section confirmed mucoepidermoid carcinoma in left parotid gland but was inconclusive for tumor grade. On the other hand, intraoperative frozen section was conclusive for typing and grading of right parotid mass.

The treatment for low grade mucoepidermoid carcinoma of superficial part of parotid gland is

superficial parotidectomy (23). The suggested management for intermediate grade mucoepidermoid carcinoma is excision of lesion with negative surgical margins through total parotidectomy with preservation of facial nerve. Selective neck dissection in N0 patients is recommended both in intermediate and high grade mucoepidermoid carcinoma (23). In this case, the management of intermediate grade mucoepidermoid carcinoma in left parotid was accomplished through total parotidectomy along with lateral neck dissection. The right parotid mucoepidermoid carcinoma with low grade was managed with superficial parotidectomy.

## CONCLUSION

The diagnosis of malignant tumors of parotid gland warrants a detailed examination. US is the first choice in imaging modalities. MRI and/ or

computerized tomography are suggested to determine the expanse of malignant tumors or presence of metastatic lymph nodes. For identifying the possible occult synchronous tumors in contralateral parotid gland and other salivary glands, the radiographic images should be analyzed carefully. FNAB and intraoperative frozen section contribute to tumor typing and grading for the establishment of surgical plan. Surgical removal is recommended for the management of synchronous bilateral parotid mucoepidermoid carcinoma like all benign and malignant tumors of salivary glands. Close clinical follow-up is also suggested for the risk of future metachronous tumor occurrence or recurrences.

**Acknowledgement:** We are deeply grateful to Dr. Tulay Basak (Pathologist) for the histopathological examination of the preparates and providing the microscopical images.

## REFERENCES

1. Baid M, Chaturvedi V, Jha J. Bilateral mucoepidermoid carcinoma of parotid. *El Med J* 2014; 2: 131-3. [CrossRef]
2. Cornog JL, Gray SR. Surgical and clinical pathology of salivary gland tumors. In: Rankow RM, Polayes IM (eds) *Disease of the Salivary Glands*. Philadelphia: WB Saunders Co; 1976. p. 99-142.
3. Seifert G. Bilateral mucoepidermoid carcinoma arising in bilateral preexisting Warthin's tumors of the parotid gland. *Oral Oncol* 1997;33:284-7. [CrossRef]
4. Muthusami JC, Gaikwald P, Raj JP, Abraham DT, Thomas M, Cornerstone V. Metachronous bilateral mucoepidermoid carcinoma of the parotid gland. *Indian J Otolaryngol Head Neck Surg* 2008; 60: 245-7. [CrossRef]
5. Turnbull AD, Frazell EL. Multiple tumors of the major salivary glands. *Am J Surg* 1969; 118: 787-9. [CrossRef]
6. Hakuba N, Hyodo M. Synchronous bilateral mucoepidermoid carcinoma of the parotid gland. *J Laryngol Otol* 2003; 117: 419-21. [CrossRef]
7. Yu Gy, Ma DQ, Zhang Y, Peng X, Cai ZG, Gao Y, et al. Multiple primary tumors of the parotid gland. *Int J Oral Maxillofacial Surg* 2004; 33: 531-4. [CrossRef]
8. Tongeren JV, Creytens DH, Meulemans EV, de Bondt RB, de Jong J, Manni JJ. Synchronous bilateral-myoepithelial carcinoma of the parotid gland: case report and review of the literature. *Eur Arch Otorhinolaryngol* 2009; 266: 1495-500. [CrossRef]
9. Bauer WH, Bauer JD. Classification of glandular tumors of salivary glands. *AMA Arch Pathology* 1953; 55: 328-46.
10. Diamani H, Enroth CM, Gerjot T. Bilateral tumors of parotid gland. *J Laryngol Otol* 1961; 7: 699-702. [CrossRef]
11. Enroth CM. Histological and clinical aspects of parotid gland tumors. *Acta Otolaryngol Suppl* 1964; 188(Suppl 191): S1-99.
12. Clarke JS, Major MC, Edwin C, Hentz C, Mahoney WD. Bilateral acinic cell carcinoma of the parotid gland. *Ann Surg* 1969; 170: 866-9. [CrossRef]
13. Levin JM, Robinson DW, Lin F. Acinic cell carcinoma: collective review, including bilateral cases. *Arch Surg* 1975; 110: 64-8. [CrossRef]
14. Nelson DW, Nichols RD, Fine G. Bilateral acinous cell tumors of the parotid gland. *Laryngoscope* 1978;88:1935-41. [CrossRef]
15. Di Palma S, Corletto V, Lavarino C, Birindelli S, Pilotti S. Unilateral aneuploid dedifferentiated acinic cell carcinoma associated with bilateral low grade diploid acinic cell carcinoma associated with bilateral low grade diploid acinic cell carcinoma of the parotid gland. *Virchows Arch* 1999; 434: 361-5. [CrossRef]
16. Berkley WT. Nevus sebaceous complicated by bilateral salivary gland adenocarcinoma. *Plast Reconstr Surg Transplant Bull* 1959; 23: 55-63. [CrossRef]
17. Ferlito A. Bilateral synchronous trabecular adenocarcinoma of the parotid gland. *ORL* 1978; 40: 120-6. [CrossRef]
18. Henrys CE, Griq R. Use of fine needle aspiration cytology in the diagnosis of parotid neoplasms. *ANZ J Surg* 2015; 85: 838-42. [CrossRef]
19. Zbaren P, Nuyens M, Loosli H, Stauffer E. Diagnostic accuracy of fine-needle aspiration cytology and frozen section in primary parotid carcinoma. *Cancer* 2004; 100: 1876-83. [CrossRef]
20. Nishikawa S, Kawata R, Higashino M, Lee K, Terada T, Kurisu Y, et al. Assessing the histological type and grade of primary parotid carcinoma by fine needle aspiration and frozen section. *Auris Nasus Larynx* 2015; 42: 463-8. [CrossRef]
21. Chen MM, Roman SA, Sosa JA, Judson BL. Histologic grade as prognostic indicator for mucoepidermoid carcinoma: a population-level analysis of 2400 patients. *Head Neck* 2014; 36: 158-63. [CrossRef]

22. Ghosh-Laskar S, Murthy V, Wadasadawala T, Agarwal J, Budrukkar A, Patil N, et al. Mucoepidermoid carcinoma of the parotid gland: factors affecting outcome. *Head Neck* 2011; 33: 497-503. **[CrossRef]**
23. Aro K, Leivo I, Makitie AA. Management and outcome of patients with mucoepidermoid carcinoma of the major salivary gland origin: a single institution's 30 year experience. *Laryngoscope* 2008; 118: 258-62. **[CrossRef]**