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Primary malignant melanoma of the parotid gland: A case report and review of the literature

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ABSTRACT

Introduction: Malignant melanomas (MM) of the parotid gland are rather rare and when discovered in the parotid gland without an identifiable primary site, they are considered even rarer.
Presentation of case: We report a case of a 27 years-old woman who was admitted to our department with a complaint of a painless mass in the parotid area. Clinical examination and radiological investigations found a mass compatible with pleomorphic adenoma. Treatment consisted of superficial parotidectomy. The evolution was marked by the appearance of a tumefaction regarding the scar. A total parotidectomy with neck dissection was performed and the histopathological examination found an intraglandular melanoma.
Conclusion: Primary malignant melanoma may represent a serious diagnostic challenge. It should be considered in the differential diagnosis of parotid tumors even if it's rare.

1. Introduction

Malignant melanoma (MM) of the parotid gland is an uncommon condition, with primaries usually originating in the skin of the head and neck. Primary malignant melanoma of the parotid gland (PGMM) is estimated to be very rare, accounting for less than 0.7% of all malignant tumors of the parotid gland and the recognition of their features is based mainly on sporadic case reports [1,2]. They are characterized by a poor prognosis, difficult late diagnosis, and classification.

Takeda found melanocytes in the interlobular duct of the parotid gland during an autopsy performed on a Japanese male, melanocytes derive embryologically from the neural crest and do not usually form part of the salivary tissue [3].

The following case describes primary malignant melanoma of the parotid gland in a 27-year-old woman. This work is reported by following the surgical case report (SCARE) guidelines [4].

2. Presentation of Case

A 27-year-old woman presented at our institution with 8 months history of a painless mass in the parotid area. No other symptoms were present and her past medical history was unremarkable, no pharmacological allergies, no psychosocial problems, smoking and no family genetic disease.

Physical examination showed a voluminous round, painless approximately 5 cm in size mass located in the left parotid compartment. No other clinical features were perceived particularly no facial paralysis or lymphadenopathy and the whole-body examinations were unremarkable.

The patient performed an MRI (Magnetic Resonance Imaging) that indicated voluminous tumoral process of the left parotid iso signal T1, hyper signal heterogeneous T2 suggesting a pleomorphic adenoma (Fig. 1).

With suspicion of pleomorphic adenoma, a left superficial lobe parotidectomy was performed by an ENT professor.

The evolution was marked by the appearance 2 months after the surgery of a tumefaction regarding the scar rapidly increasing in size (Fig. 2) without other associated signs, in particular no facial paralysis.

The control MRI (Fig. 3) showed an aspect of tumor remnants, most likely lymph node.

Because of these results, we suspected a malignant transformation of the pleomorphic adenoma and the decision was to performed total parotidectomy with neck dissection performed by the same ENT professor.

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During the intervention, we observed that the facial nerve was infiltrated by the tumor and we decided to sacrifice the facial nerve.

Histopathological examination (Fig. 4) showed intraglandular melanoma whose cells were melan A positive and HMB-45 positive and absence of lymph node metastasis.

Other complementary studies were done searching for a possible primary tumor, considering that a primary malignant melanoma of the salivary glands is so uncommon.

PET-scan and pan endoscopy was performed and showed no sign of a possible primary tumor.

He also was evaluated by a Dermatologist, Neurologist, and Ophthalmologist not finding any suggestion in the physical examination or imaging testing that lead to a suspicion of a possible primary tumor in their areas of expertise.

The patient adhered well to the treatment received with a good tolerance to the surgery and post-operative care including antibiotics, local care. The patient was scheduled for facial paralysis rehabilitation.

She was referred then to the department of Oncology for evaluation whose decision was to start radiotherapy.

The patient was followed in ENT and Ophthalmology consultation every 15 days for the first two months then once a month. The follow-up was essentially clinical without questionnaire or pre-established scale.

The patient died 11 months later with generalized visceral metastases.

3. Discussion

Malignant melanomas of the parotid gland are generally metastatic with primaries usually originating in the skin of the head and neck [1].

The parotid gland contains three groups of lymph nodes formed during embryologic development, involving the parotid parenchyma, parotid fascia, and pre-auricular extra glandular soft tissue [5].

Rarely, melanoma is diagnosed in the parotid parenchyma or parotid lymph nodes without an identifiable primary site; this could result from either a regressed cutaneous head and neck melanomas with parotid metastases or from a primary parotid melanoma derived from ectopic melanocytes within the parotid parenchyma [3,6,7]. Nevertheless, the primary malignant melanomas of the parotid gland are a diagnosis of exclusion. To make the diagnosis, Woodward et al. proposed that four conditions should be fulfilled [2,7].

- Most of the tumor contained in the parotid gland;

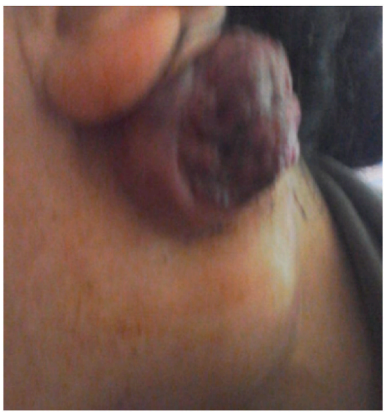

Fig. 2. Lateral view of the patient showing a right swelling in the parotid gland area with ulceration and necrotic foci.

- The tumor does not contain any identifiable lymph node tissue;
- No evidence of other MM lesions in the body;
- No suspicious pigmented lesion or MM excision.

These criteria were met in our patient for a diagnosis of primary PGMM.

The presence of intracellular melanin pigmentation represents the gold diagnostic criterion for MM, which is only found in 40–60% of cases [8]. MM cells, by immunohistochemical staining, would present the presence of S100 and HMB45 proteins in most cases [9].

In our case, positivity for HMB45 and Melan-A confirmed the diagnosis.

A thorough examination should include a careful analysis of the skin, an eye exam, a panendoscopy, an ultrasound/CT scan of the abdomen, a PET, and a CT scan of the chest and brain [10]. Lopez-Cedrun et al. suggest that there will be doubt about the primary origin even with normal results, they believe that the location of the primary malignant melanoma is in an internal organ that is difficult to explore [1].

Standard treatment in parotid gland cancers is surgical and a total parotidectomy should be performed [1], however radical parotidectomy should be avoided if possible, as this does not improve life expectancy [11,12] and the resulting facial palsy considerably worsens the quality of life.

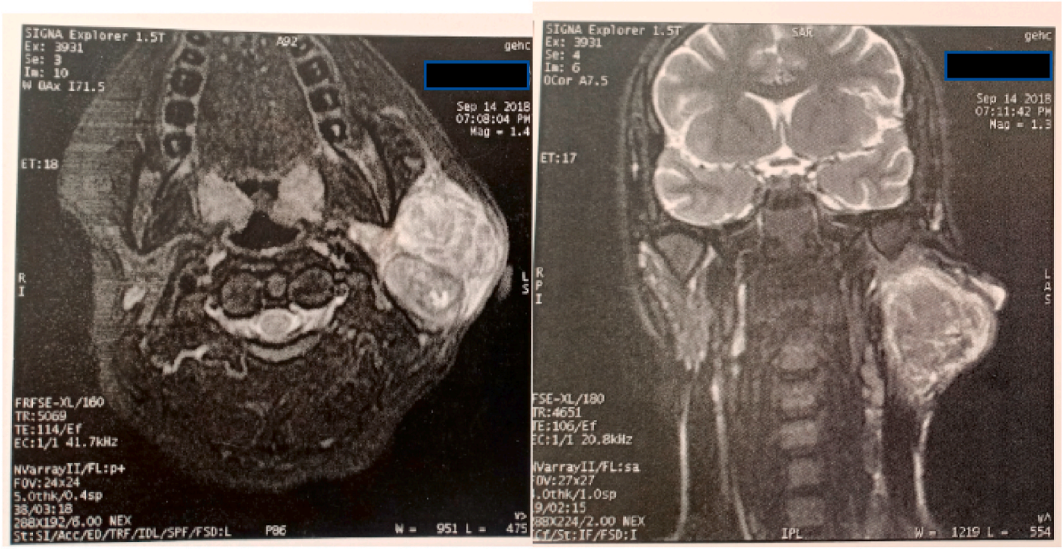

Fig. 1. Cervical T2 MRI (axial and coronal view) demonstrating a voluminous tumoral process of the left parotid hypersignal heterogeneous suggesting a pleomorphic adenoma.

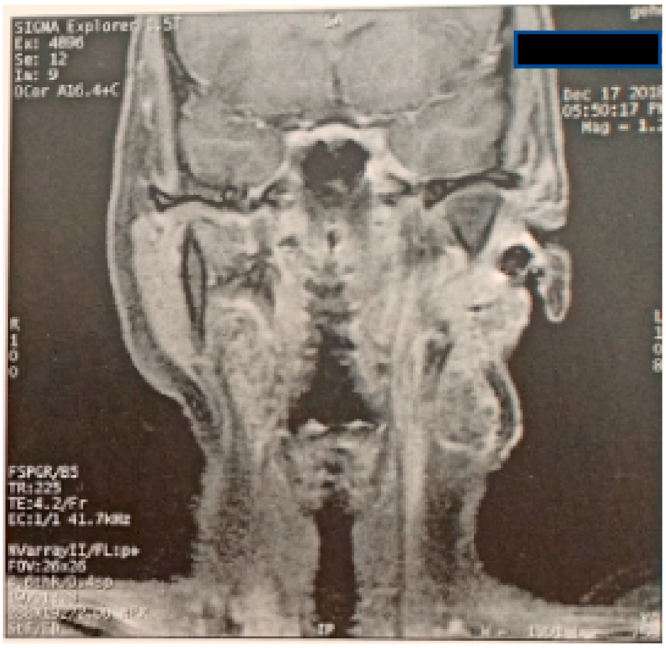

Fig. 3. Coronal view of cervical MRI showing two masses, one in the parotid region and another in the sub Angulo-mandibular region giving an aspect of tumor remnants, most likely lymph node.

A superficial parotidectomy was performed in our patient at first and completed after by total parotidectomy with the sacrifice of the facial nerve.

Due to the high incidence of occult lymph node metastases, at least a selective neck dissection should always be carried out in the N0 neck [13]. This can significantly reduce the incidence of cervical recurrences [14]. In the case of clinically manifest cervical lymph node metastases, a functional and, in exceptional cases, a radical neck dissection is recommended [1].

Postoperative irradiation, chemotherapy and/or immunotherapy are controversial [1,15–17]. So far there are no studies that could provide clear evidence for the positive influence of adjuvant therapy on survival rate and quality of life. However, in this type of tumor, adjuvant radiotherapy is recommended for high-risk patients, based on grade, stage, and margin of excision to improve local control even if it's not part of a regular treatment protocol [18].

Facial nerve palsy is the most common complication of the surgical management of parotid malignancies [18].

In our case, the facial nerve infiltration leads to its sacrifice.

Patients with PGMM have a poor prognosis even with the best treatment efforts [8], Nevertheless, The prognosis of patients with MM in parotid or an intra-parotid lymph node without other detectable melanoma manifestations at diagnosis seems to be better in comparison to patients with known cutaneous or mucocutaneous primary tumor. Santini et al. [19] described for patients with melanoma metastases in the area of Eq. parotidea or the cervical lymph node with an unknown primary tumor a 5-year survival rate of 38.5% compared to only 22.6% with a known primary tumor.

In our case, the patient died 11 months later due to generalized visceral metastases.

4. Conclusion

Primary malignant melanomas of the parotid gland are extremely rare and have a poor prognosis. There is not yet a clear consensus on their management treatment, but there is a need for early detection, adequate and aggressive treatment to improve survival rate as well as the quality of life.

We note the importance of examining the entire skin in front of any parotid mass for a possible primary lesion.

Declaration of competing interest

The authors declare that they have no competing interests.

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Ethical approval

I certify that this kind of manuscript does not require ethical approval by the Ethical Committee of our institution.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Anass Chaouki: writing the paper.
Berrada Omar: writing the paper.
Zouhair Najib : study concept.
Youssef Oukessou: study concept.
Sami Rouadi: study concept.
Reda allah Abada: correction of the paper.
Mohamed Roubal: study concept.
Mohamed Mahtar: correction of the paper.

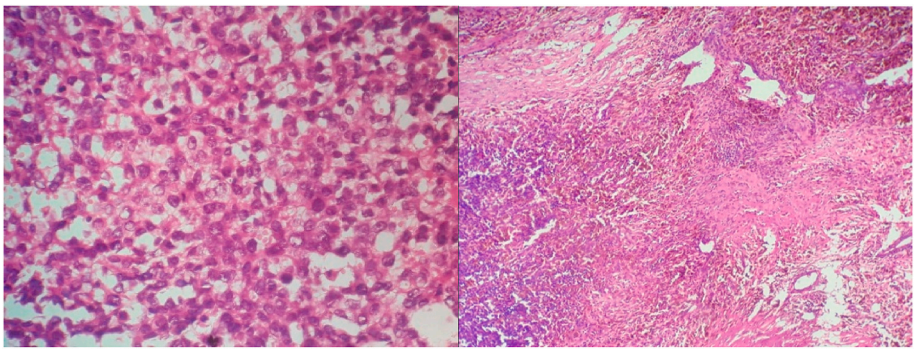

Fig. 4. Representative area of tumor showing melanoma (Hematoxylin-eosin stain).

CRediT authorship contribution statement

Anass Chaouki: conception, and design of the study. **Omar Berrada:** conception, and design of the study. **Zouhair Najib:** acquisition of data. **Youssef oukessou:** drafting the article. **Reda Allah Abada:** drafting the article. **Sami Rouadi:** revising the article. **Mohammed Roubal:** revising the article. **Mohammed Mahtar:** final approval of the version to be submitted.

Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.amsu.2020.11.085.

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