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Radiation Therapy

Cribriform Carcinoma of the Accessory Salivary Glands, what is the Role of Radiotherapy in the Treatment

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Abstract | **Case Report**

Cribriform adenocarcinoma of the accessory salivary glands is a rare tumor, characterized by the frequence of cervical lymph node metastases, and a favorable prognosis. We report the observation of a patient treated by surgery followed by radiation therapy, to illustrate the crucial role of radiotherapy in the management of this disease, as well as the evolution after radiotherapy. This is a 79-year-old woman, without medical history, with a lesion of the soft palate, lateralized to the left, measuring 3 cm, with no cervical adenopathy. The histopathological point of view, cribriform carcinoma of the minor salivary glands presents similarities with papillary thyroid carcinomae. The patient was treated by surgery followed by adjuvant treatment based on local external radiotherapy, delivered by the intensity-modulated conformal radiotherapy technique of the arc therapy type, by photons with energy of 6 Mev in 2 arcs with a total dose of 66 to 70 Gray by a classic fractionation of 2 Gy/fraction, 5 days out of 7, for 7 weeks. In our case, the prognosis was good, with no recurrence or metastasis over an 18-month follow-up.

Keywords: Follow up, target volume, surgery, radiotherapy, cribriform carcinoma.

INTRODUCTION

Cribriform adenocarcinoma of the accessory salivary glands is a rare tumor first described in 1999 [1]. We report the observation of a patient with cribriform carcinoma of the small salivary glands who was treated by surgery followed by external radiotherapy. The objective of this work is to illustrate the crucial role of radiotherapy in the management of this disease as well as the evolution after radiotherapy.

CASE PRESENTATION

This is a 79-year-old woman, with no significant medical history, who presented with a lesion of the soft palate, lateralized to the left, measuring 3 cm, with no cervical adenopathy in the cervicofacial magnetic resonance imaging. From a histopathological point of view, cribriform carcinoma of the minor salivary glands presents similarities with papillary thyroid carcinomae. The patient was treted by surgery. The surgical report showed a 1 cm left velar tumor with a dual infiltrating and budding component. The surgical excision was performed without lymph node dissection. The presence of cervical lymph node metastases in cribriform carcinoma are frequent but not systematic. The anatomopathological report of the surgical specimen confirmed that it was a cribriform carcinoma of the accessory salivary glands. The patient was then referred to our training to complete with adjuvant treatment based on local external radiotherapy.

Radiotherapy is delivered by the intensity-modulated conformal radiotherapy technique of the arc therapy type, by photons with energy of 6 Mev in 2 arcs with a total dose of 66 to 70 Gray by a classic fractionation of 2 Gy/fraction, 5 days out of 7, for 7 weeks. Intensity Modulated Radiation Therapy is the standard irradiation technique for head and neck cancer, including salivary glands, because it reduces the risk of severe toxicity better than 3D conformal radiotherapy. For our observation, radiotherapy treatment was carried out according to the recommendations in 3 volumes and 3 dose levels, highlighted in the figure *1*. The treatment was carried out under good conditions, with regular monitoring of the positioning by Cone Beam CT control images. Radiotherapy is delivered to the target volume in

order to have local control of the disease, while respecting healthy organs located near the tumor volume called organs at risk and which must be spared as much as possible in order to avoid the side effects of radiotherapy. The organs at risk were delineated in our case and their constraints were respected highlighted in table *1*.

Our case shares the clinical and evolutionary characteristics reported in the original description, apart from the absence of lymph node metastasis. The treatment was similar, consisting of surgical excision, but without cervical lymph node dissection, followed by adjuvant external radiotherapy. In our case, the prognosis was good, with no recurrence or metastasis over an 18-month follow-up.

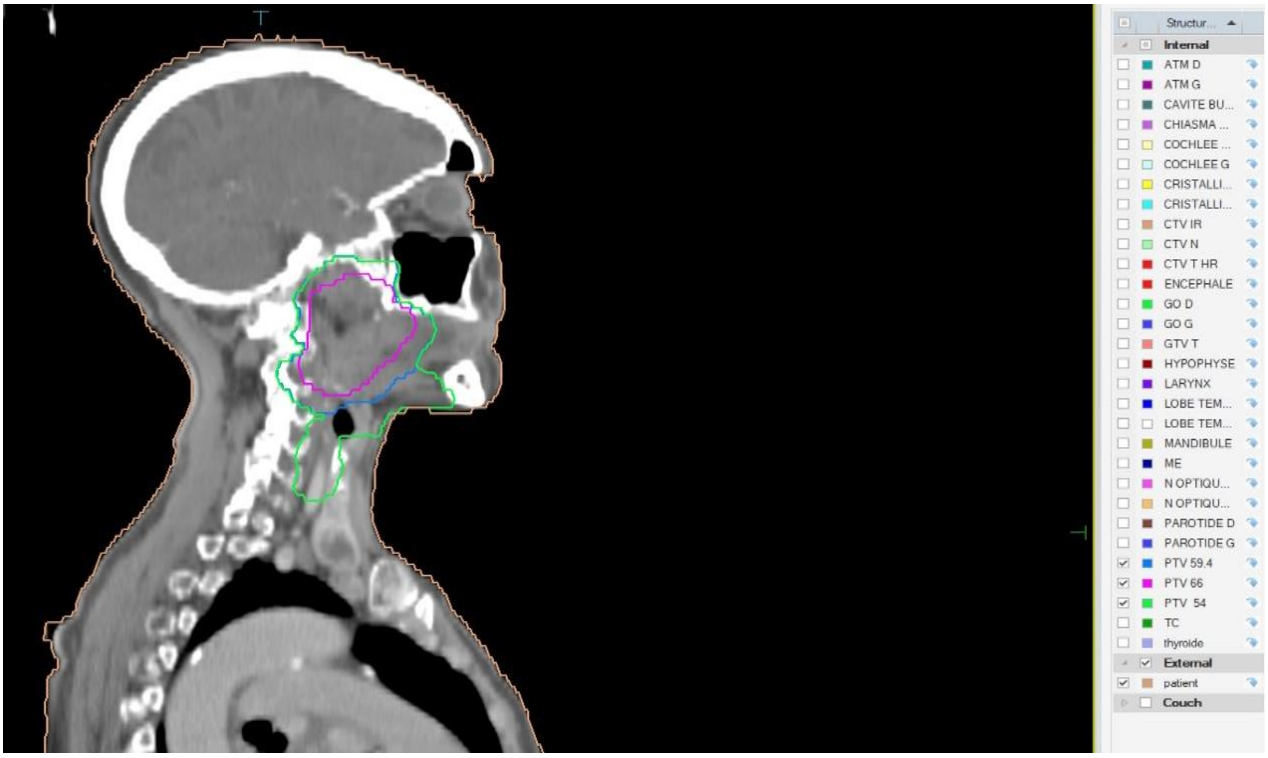

Figure 1: Delineation of target volumes and organs at risk in the case of cribriform carcinoma of the accessory salivary glands

Target volumes
Pink volume Hight risk target volume
Blue Volume Intermediate risk target volume
Green volume Low risk Target Volume
Radiation therapy was delivred by arc therapy with intensity modulated radiation therapy

Table 1: Dose Volume Histogram statistics of tumor of minor salivar gland cribriform carcinom

Structures	Mean dose	Max dose	Reference volume (%)	Reference Dose (Gy)
PTV 66	67.79	72.74	**99.99**	62.7
PTV 59,4	65.07	72.74	**99.87**	56.43
PTV 54	60.29	72.74	**99.71**	51.3
Spinal cord	10.74	43.02	2	**38.66**
Brainstem	9.86	42.7	2	**38.76**
Right parotid	**32.61**	59.75	51.98	30
Left Parotid	**38.74**	64.16	68.75	30
Mandible	45.91	**69.3**	2	65.43
Larynx	**44.13**	64.61	60.98	45

The organs at risk called critical whose constraints must be imperatively respected are the brain stem whose D 2% must not exceed 54 Gy, this said that the dose received by a volume of 2% must not exceed 54 Gy, the spinal cord with a maximum not exceeding 45 Gy and the optical structures whose maximum dose must not exceed 55 Gy, while sparing the forecast high risk volume.

The other organs whose constraints must be respected, the mandible without exceeding 70 Gy as maximum dose, the parotid gland with a mean dose not exceeding 26 Gy, and the larynx with a mean dose of 45 Gy not to be exceeded; following the conventional scheme, i.e. 1.8 to 2 Gy/fraction

DISCUSSION

Cribriform adenocarcinoma of the accessory salivary glands is a rare tumor. Rare cases have been reported in the literature [1]. This entity was considered a variant of low-grade polymorphous adenocarcinoma in the 2005 WHO classification [2]. For the treatment, according to the recommendations of the French network of expertise on rare ENT cancers, in accessory salivary gland tumor, radiotherapy can be considered as adjuvant treatment after surgery or exclusively in the event of unresectability of the tumor. In the absence of lymph node involvement, complete excision of the tumor is performed. If a risk factor is present, radiotherapy would be considered. Factors are: high or intermediate grade; positive or marginal limits, perineural invasion, lymph node metastases; the presence of vascular emboli, and stage T3 or T4a; in this case, adjuvant radiotherapy or even associated chemotherapy may be considered. And, if the resection was incomplete with persistence of residual tumor, a surgery would be indicated if feasible, otherwise external radiotherapy with or without chemotherapy would be performed. [3-8] Radiotherapy treatment, it is delivered by the intensity-modulated conformal radiotherapy technique of the arc therapy type, by photons with energy of 6 Mev in 2 arcs with a total dose of 66 Gray in the case of radiotherapy as an adjuvant to surgery, and up to 70 Gy in the case of exclusive radiotherapy in the case of an existing tumor, and this by a classic fractionation of 2 Gy/fraction, 5 days out of 7, for 7 weeks. IMRT is the standard irradiation technique for head and neck cancer, including salivary glands, because it reduces the risk of severe toxicity better than 3D conformal radiotherapy. Radiotherapy is delivered to the target volume in order to have local control of the disease, while respecting healthy organs located near the tumor volume called organs at risk and which must be spared as much as possible in order to avoid the side effects of radiotherapy. Usually in cribriform carcinoma of the salivary glands, the presence of cervical lymph node metastases is very frequent. The prognosis is very favorable for this tumor, with no recurrence or metastasis observed during follow-up, which ranged from 2 to 6 years.

CONCLUSION

Our observation shares the clinical and evolutionary characteristics reported in the original description, apart from the absence of lymph node metastasis, treated by surgical excision without cervical lymph node dissection followed by external radiotherapy. The prognosis was good, with no recurrence or metastasis over an 18-month follow-up. It is an anatomoclinical entity to be differentiate from papillary thyroid carcinoma.

Additional Information

Conflicts of interest: All authors declare no conflict of interest

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