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FIBROSARCOMA INDUCED BREAST

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ABSTRACT

Introduction: fibrosarcoma induced radiosarcoma is a rare and late complication of the treatment of this breast cancer. **Observation:** We report a case of radioactive sarcoma induced in a patient with a history of breast cancer treated with radical surgery associated with adjuvant radiotherapy. **Discussion:** The prognosis of radio-induced fibrosarcoma depends on the precocity of diagnosis and quality of surgical excision, with long-term follow-up of radiation fields after radiotherapy to improve the survival of these patients.

INTRODUCTION

Radiation therapy is an integral part of the treatment of patients with primary breast cancer. Radiation-induced sarcoma (SRI) is a rare but recognized complication of adjuvant radiation therapy for breast cancer.

The incidence of SRI is 3.2 per 1000 to 15 years (compared to 2.3 per 1000 for primary sarcoma in a population without radiotherapy).[1]

The first case of soft tissue sarcoma occurring in the volume of irradiation for breast cancer was described by Warren and Sommer in 1936.[2] In 1948, Cahan et al. Defined the four diagnostic criteria for radiation-induced sarcoma.[3]

- previous irradiation,
- latency period of several years (About 4 years),
- histology of sarcoma,
- the seat in the irradiated volume.

OBSERVATION

Our patient is 64 years old, having an antecedents: infiltrating ductal carcinoma (CCI) of the left breast, having benefited from a patey with radiotherapy type cobaltotherapy.

Eighteen years later, the patient came to the consultation for a parietal mass with projection on all the left major pectoral, extended to the axillary region, hard consist of 8 / 8cm without cutaneous sign opposite.

The thoracic CT had revealed a parietal mass infiltrating the pectoral muscle without underlying osteolysis (Fig. 1).

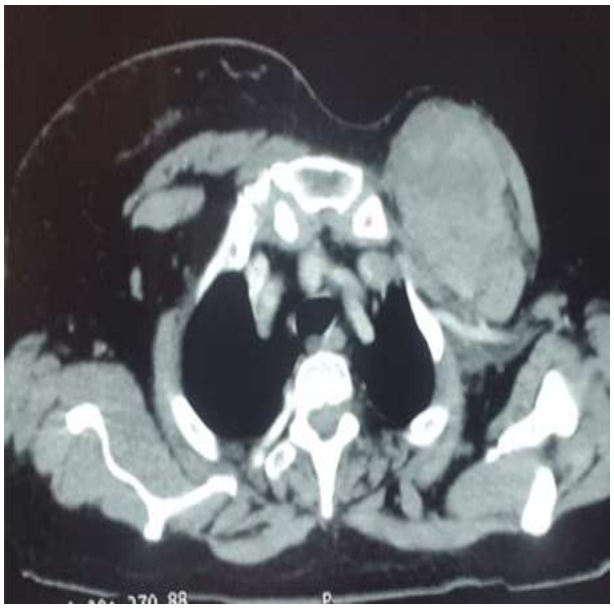

Fig. 1: Scanner thoracique en coupe transversale: masse des parties molles de siège axillaire gauche.

The diagnosis of a leiomyosarcoma following a trucut biopsy was retained.

The patient underwent surgical resection of the mass carrying the pectoral muscle. The anatomopathologic study with immunohistochemical study showing a consistent appearance with FNCLCC grade II-III fibrosarcoma (Fig. 2). The postoperative progression was normal after six months of monitoring.

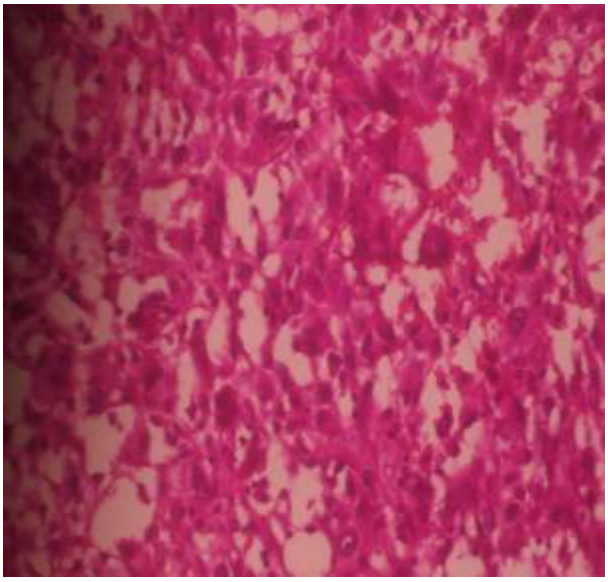

Fig. 2: Fusocellular tumor proliferation with high cellularity. Cells showing an elongated fusiform nucleus with a prominent nucleolus and showing a pronounced pleomorphism in places.

DISCUSSION

Improved efficacy of anti-cancer treatments increased the survival rate of patients and the incidence of SRI.[5] Their prevalence is low, of the order of 0.14 to 0.20% with a relative risk of between 1 and 5.

The latency period varies from three months to 50 years, with an average between 9 and 20 years. The minimum latency allowed for the diagnosis of SRI is 3 years,[6] which seems to be influenced by factors such as age at irradiation, irradiation modalities, Histology of sarcoma, and some congenital pathologies such as bilateral retinoblastoma, peripheral Recklinghausen disease, ataxia-telangiectasia, Li-Fraumeni syndrome, type 1 neurofibromatosis, and Gorlin-Goltz syndrome (basal cell nevomatosis) Are associated with a greater frequency of SRI with a shorter latency period.[7] The loss of heterozygosity in directly irradiated nuclei is the predominant change associated with radio-induced mutations. This can lead to deletions, recombinations and chromosomal rearrangements. Mertens et al.[8] showed greater deletions on the arm of chromosome 3p in SRI, particularly 3p21-3pter.

The delivered dose also plays a role. The relative risk of developing soft tissue sarcoma at 10 years of irradiation is 0.5 for doses below 10 Gy, while it is 2.8 for doses greater than 10 Gy.

The diagnosis of an SRI is often obtained at an advanced stage, the clinical presentation is that of a mass developed in the territory previously irradiated: mammary tissue after conservative treatment or the chest wall after mastectomy, other localizations are rare, Imaging is non-pathognomonic and the exclusion of a recurrence of the primary mammary tumor is often difficult on the data of imaging alone.[10]

All SRI must be histologically proven. Most of these are fibrous malignant histiocytoma, angiosarcoma, osteosarcoma or fibrosarcoma.[8,10] In contrast, in a large series from the Institut Curie Histological types were dominated by angiosarcomas in 48% of cases.[4]

Whatever their histological nature, they are aggressive tumors with a high potential of local recurrence, and of pulmonary and hepatic metastases. Nodal invasion is reported in 12% of patients.[5] These are lymphophilic tumors.

Treatment is primarily surgical. Complete resection of the tumor is often difficult because of its infiltrating and poorly limited character in irradiated territory, as in our patient. Adjuvant radiotherapy is rarely used, but re-irradiation is beginning to be possible, thanks to new techniques of three-dimensional conformal irradiation or by a modification of the fractionation and the dose delivered. Hyperfractionation has an efficiency equivalent to 2.4 Gy, with late effects equivalent to 1.2 Gy. The development of intensity modulation radiotherapy (IMRT) will reduce the exposure of normal tissues.

Although SRI is classically considered to be slightly chemosensitive, encouraging results have been obtained after R0 excision and neoadjuvant chemotherapy. The protocols used are CYVADIC (cyclophosphamide, vincristine, adriamycin, deticene) or MAID (mesna, adriamycin, ifosfamide, dacarbazine). Side effects are important and often limit their use.[11]

SRI is associated with poor prognosis, median survival ranging from 20 months (tumor less than 2 cm) to 80 months (tumor greater than 5 cm). Local recurrence occurs in 77% of cases after a median free interval of 12.8 months. This pejorative prognosis is attributed to several factors, including localization, tumor size, histological grade, histological type (leiomyosarcomas are better prognostic) and surgical quality, with better survival in histologically sound margins

Close monitoring is necessary, especially within the limits of irradiation fields. In the presence of any suspicious clinical manifestations, a computed tomography or nuclear magnetic resonance scan should be carried out quickly, supplemented if necessary by a biopsy for histological evidence, with a detailed immunohistochemical study.[12]

CONCLUSION

We report the case of an induced radio sarcoma, which developed 18 years after radiotherapy for breast cancer. This case study illustrates the risk of developing sarcoma in a radiation field and the long-term need for follow-up

after radiotherapy. Early diagnosis and follow-up of these patients are needed to improve survival.

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