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Radiation-induced angiosarcoma of the breast (RIA): what is the optimal management? Review of the literature our centre experience and a case report highlighting the value of a novel chemotherapeutic regimen

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Background and Objectives: Angiosarcoma of the breast is an uncommon, extremely hostile neoplasm of vascular origin. The frequency of this rare tumor is 0.04% of primary mammary tumors and appoximately 8% of mammary sarcomas. It carries a very poor prognosis, with a five-year survival of 8-50%. RIA were first reported in literature in 1929. This presentation addresses the value of aggressive treatment with novel neo-adjuvant chemotherapy followed by surgery.
Methods: An extensive review of the literature have been carried out to detect any possible guidelines in the management of RIA. We report the case of a 73-year-old woman with locally advanced RIA that was otherwise too extensive to be treated surgically. A novel neoadjuvant chemotherapy regimen with gemcitabine 675 mg/m2 on Day 1 and 8 and docetaxel 100 mg/m2 on day 8. For 6 cycles was used.
Results: There is general consensus in literature that the only logical treatment of RIA regardless of histologic type is wide surgical resection. Conservative treatment even with negative margins exposes the patient to early recurrences and metastatic spread. Adjuvant Chemotherapy in RIA has so far produced disappointing results. Radiation therapy has been avoided in these cases due to concerns about the toxicity of repeated treatment. However recently some encouraging results have been achieved with the use of hyperfractionated radiotherapy.
In our case and following initiation of Chemotherapy, Dramatic improvement was seen after 2 cycles, with diminution of skin discoloration, skin thickening and papule appearance. After 4 cycles, MRI revealed a near-complete resolution of the areas of asymmetric enhancement in the breast as well as marked improvement of skin thickening and enhancement. Clinically, the involvement beyond the mastectomy borders had resolved, making the patient eligible for resection with intent to achieve wide negative margins. Subsequently, wide local resection has been carried out. Pathologically, there was no residual tumour in the surgical specimen.
Conclusions: Review of the literature reveals that Survival of patient with RIA is poor and current treatment options have traditionally been ineffective. We report the first case of a locally advanced radiation-induced angiosarcoma of the breast that was not only rendered operable, but also showed dramatic complete resolution after neoadjuvant gemcitabine-docetaxel chemotherapy. That response has facilitated complete surgical resection. Despite that excellent response, patient succumbed to her disease 5 years later.