Case Report: Aggressive Gamma/Delta T-cell lymphoma – successfull therapy with encapsulated doxorubicin

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Clinical and immunhistological findings

An 82-year-old female patient initially presented with a prominent, reddish-livid, sharply circumscribed tumor measuring 10 x 5.5 cm on the left forearm, as well as multiple small-nodular efflorescences on both arms, the trunk, and the dorsum of the feet. The histologic picture was consistent with peripheral T-cell lymphoma. Immunohistochemical workup showed CD3 expression, high proliferative activity at 70%, and staining with gamma and delta showed the impressive picture of a consistently homogeneous reaction product with delta (Figure 1a-d). No clonal T-cell receptor rearrangement was found in the molecular workup. Initial staging showed no systemic involvement (pT3N0M0). Incidentally, the patient suffered from arterial hypertension and sigmoid diverticulosis.

Treatment

We initially treated with twelve doses of gemcitabine 600 mg fix-dose and local radiotherapy of the tumor node on the left forearm. As the cutaneous manifestations progressed, we switched to off-label therapy with pembrolizumab 200 mg every three weeks in combination with radiotherapy of the tumor nodes on the right forearm, legs and feet on both sides. As the cutaneous tumors progressed again after seven doses of pembrolizumab, therapy was switched to liposomal encapsulated doxorubicin, initially 20 mg/m2 on days 1 and 15, then every four weeks. With this therapy, tumor response has been good after six administrations to date (Figure 2), allowing the dose to be 10 mg/m2.

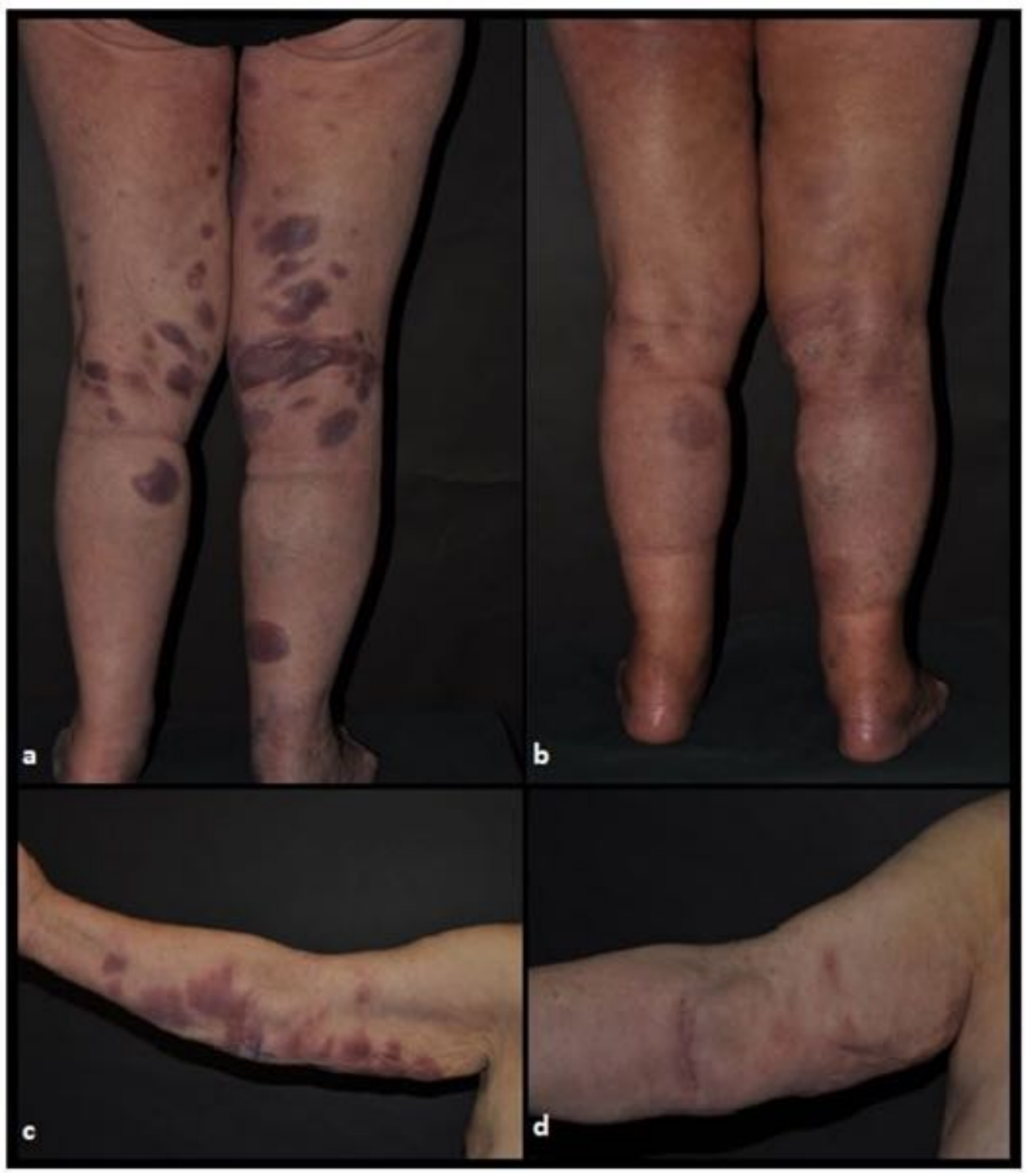

Figure 2: Tumor progress after therapy with gemcitabine, pembrolizumab and local radiotherapy **(a, c)** . Complete remission after therapy with encapsulated doxorubicin **(b, d)** .

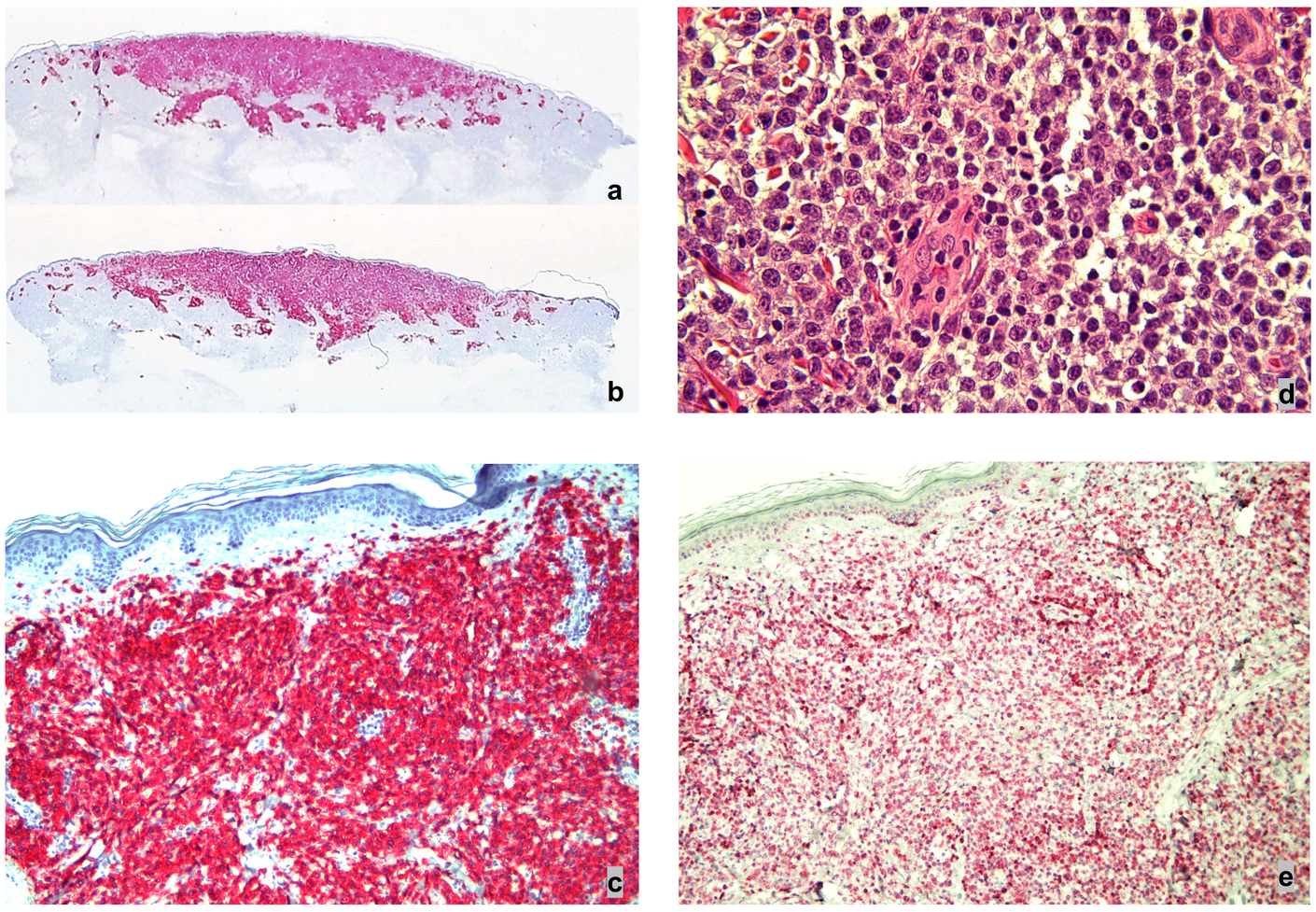

Figure 1: Histologic examination of a tumor node shows CD3 expression (magnification x2.5) **(a)**, and a consistently homogeneous reaction product with delta (magnification x2.5 and x10) **(b, c)**. Hematoxylin-eosin stain (magnification x40) **(d)**. Homogenous BcL2 expression (magnification x10) **(e)**.

Conclusion

Primary cutaneous Gamma/Delta T-cell lymphomas are a heterogeneous group of rare and highly aggressive lymphomas. Median survival is 31 months, as they are largely resistant to radiotherapy and chemotherapy. Allogeneic stem cell transplantation offers the only curative therapy. There is no standard therapy due to the low incidence and lack of prospective studies, so that an individual therapy decision must be made for each patient. Encapsulated doxorubicin may be a good therapeutic alternative to control this highly aggressive lymphoma.

Future therapeutic options

As an addititional immunohistochemical workup also showed a homogenous BcL2 expression in our case (Figure 1e), the BcL2-inhbitor Venetoclax could offer a future therapeutic option.

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