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Managing Selumetinib-Associated Skin Toxicities in a Neurofibromatosis Type 1 Patient with Inoperable Plexiform Neurofibromas

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Introduction
Plexiform neurofibromas (pNFs), benign tumors originating from Schwann cells, cause significant morbidity in neurofibromatosis type 1 (NF1) due to pain, disfigurement, and compression of vital structures. Selumetinib, a MEK1/2 inhibitor, has shown efficacy in reducing tumor volume in inoperable pNFs. However, dermatologic adverse effects (AEs) may impair quality of life and adherence, highlighting the need for effective management.

Materials and Methods
We report on a teenage NF1 patient with painful, inoperable pNFs treated with oral selumetinib (25 mg/m^2 twice daily). Eligibility criteria included significant morbidity, tumor size >3 cm, surgical inoperability, and performance status >70%. Baseline hematologic, hepatic, pulmonary, and cardiac assessments were performed. Cutaneous AEs were monitored every 3–6 months and graded using CTCAE v5.0. Tumor response and symptom improvement were recorded.

Results
Patients experience at least one cutaneous AE, most commonly xerosis, paronychia, and acneiform rash mostly in older patients with phototypes II–III. Our patient (skin phototype III) developed early acneiform rash and later phototoxicity/photosensitivity during sun exposure. Management included topical corticosteroids, emollients, and strict sun protection; topical clindamycin was irritative and poorly tolerated. No hair or nail changes were observed.

Conclusions
Selumetinib-related skin AEs may lead to treatment interruption in up to 20% of cases, with tumor rebound in 75% of those. Tailored dermatologic management is crucial to minimize AEs, prevent therapy discontinuation, and ensure sustained clinical benefit.