

Erosive Pustular Dermatitis

Erosive pustular dermatosis (EPD) is a rare and often debilitating skin disorder characterized by the development of pustules, erosions, and ulcerations. The disease is typically seen in elderly individuals, particularly those with a history of chronic sun exposure, or previous skin damage (such as surgical scars or radiation therapy). The pustules can evolve into painful erosions or ulcers that may heal with scarring. EPD is a relatively poorly understood condition, and its exact pathogenesis remains the subject of ongoing research. It is often mistaken for other inflammatory or infectious dermatologic conditions due to its clinical presentation.

Pathophysiology

The precise cause of EPD is not entirely understood, but it is believed to be a chronic inflammatory disorder of the skin. The condition is often associated with chronic sun exposure and the damage it causes to the skin, especially in individuals with compromised skin integrity. EPD often occurs in areas of previous skin trauma, including sites that have undergone surgical procedures or radiation therapy. This suggests that the condition may be precipitated by environmental factors, with sun exposure playing a key role in its onset.

The primary lesion of EPD is a pustule, which eventually becomes eroded and forms ulcers. Histologically, the disease is characterized by the presence of neutrophils in the epidermis, and subepidermal vesicles. These features suggest a pustular dermatosis, likely driven by an immune-mediated inflammatory response. The lesions are frequently localized to sun-exposed areas, such as the scalp, forehead, ears, and upper chest.

Clinical Presentation

EPD predominantly affects older adults, typically those aged 50 years and older. The condition is more common in fair-skinned individuals, particularly those with a history of extensive sun exposure or skin damage, including scarring from previous dermatologic procedures or radiation therapy.

The initial manifestation of EPD involves the appearance of pustules that evolve into painful erosions or ulcers. These lesions tend to occur in sun-exposed areas, such as the scalp, ears, forehead, and upper chest. The erosions may be associated with erythema, crusting, and scaling. The affected skin areas can be painful, and the condition may result in scarring or post-inflammatory hyperpigmentation.

Diagnosis

The diagnosis of EPD is primarily clinical, based on the characteristic appearance of pustules and erosions in sun-exposed areas. However, to confirm the diagnosis and rule out other potential causes of pustules or ulcers (e.g., bacterial infections, fungal infections, or other pustular dermatoses), a skin biopsy may be necessary. Histologic examination typically reveals subepidermal vesicles and dense infiltration of neutrophils in the dermis and epidermis. Direct immunofluorescence may also be employed to exclude autoimmune blistering diseases such as pemphigus vulgaris or bullous pemphigoid.

Treatment Options

Treatment of EPD focuses on controlling inflammation, preventing infection, and promoting wound healing. Several treatment modalities are available, ranging from topical therapies to systemic immunosuppressive agents, depending on the severity of the disease.

➤ **Topical Treatments:**

- *Corticosteroids:* Topical corticosteroids are often the first-line treatment for mild cases of EPD. They help reduce inflammation and promote healing of the pustules and erosions. However, prolonged use of high-potency corticosteroids should be avoided in elderly patients due to the potential for skin thinning and other side effects.
- *Topical calcineurin inhibitors:* For patients who may experience adverse effects from corticosteroids, topical calcineurin inhibitors (such as tacrolimus or pimecrolimus) offer an alternative option. These agents work by inhibiting the activation of T-cells and cytokine production, thus reducing the inflammatory response.

➤ **Systemic Treatments:**

- *Systemic corticosteroids:* In more severe or widespread cases, oral corticosteroids may be required to control the inflammatory process. Prednisone is commonly used for this purpose, but as with topical corticosteroids, the potential for side effects such as osteoporosis, hypertension, and hyperglycemia must be carefully monitored.
- *Immunosuppressive agents:* Systemic immunosuppressive drugs, such as azathioprine or methotrexate, may be considered for patients with chronic or recalcitrant cases of EPD. These agents help to suppress the immune system and reduce the inflammatory response that drives the disease.
- *Biologic therapies:* In refractory cases, biologic agents such as TNF- α inhibitors (e.g., infliximab) or IL-17 inhibitors may be considered. These therapies work by targeting specific cytokines involved in the inflammatory pathway and have shown efficacy in other inflammatory skin disorders.

➤ **Wound Care:**

- Wound management is an essential component of EPD treatment. The erosions and ulcers should be kept clean and protected to prevent secondary infections. Gentle wound care with non-adherent dressings, combined with the use of antibiotic ointments when necessary, can help promote healing and prevent complications.

- Topical antimicrobial agents (e.g., mupirocin or silver sulfadiazine) may be applied to prevent bacterial infection in open lesions.
- **Prevention of Sun Damage:**
 - Sun protection is crucial for patients with EPD, as further sun exposure can exacerbate the condition. Patients should be advised to use broad-spectrum sunscreens with a high SPF, wear protective clothing, and avoid direct sun exposure, especially during peak hours (10:00 AM to 4:00 PM).

Prognosis

EPD is generally a chronic condition with periods of exacerbation and remission. If treated appropriately, patients can expect a normal lifespan, although the condition can significantly affect their quality of life due to painful lesions and cosmetic concerns from scarring. In more severe cases, EPD may lead to significant disfigurement and functional impairments, particularly if mucosal areas (e.g., mouth, eyes) are involved.

Conclusion

Erosive pustular dermatosis (EPD) is a rare, inflammatory condition primarily affecting elderly individuals with a history of sun damage or previous skin trauma. Although its pathogenesis is not fully understood, EPD is characterized by the formation of pustules, erosions, and ulcers, most commonly in sun-exposed areas. Treatment typically involves the use of topical corticosteroids, systemic immunosuppressive drugs, and proper wound care to control inflammation, prevent infection, and promote healing. Given the chronic and recurrent nature of the disease, careful management is essential to reduce complications and improve patient outcomes.

References

- ❖ Yamamoto, T., Itoh, N., & Tsuruta, D. (2017). Erosive pustular dermatosis: A comprehensive review of clinical features and therapeutic options. *Journal of Dermatology*, 44(8), 896-903. <https://doi.org/10.1111/1346-8138.13831>
- ❖ Cozza, D., & Palmieri, G. (2018). Erosive pustular dermatosis of the scalp: A review of the literature. *Dermatology Reports*, 10(1), 7174. <https://doi.org/10.4081/dr.2018.7174>
- ❖ Kanzaki, T., Okada, N., & Kubo, Y. (2019). Pathophysiology of erosive pustular dermatosis: A study of its relationship to previous skin trauma and sun exposure. *International Journal of Dermatology*, 58(2), 198-203. <https://doi.org/10.1111/ijd.14378>
- ❖ Pérez, A. M., & Díaz, S. S. (2019). The role of immunosuppressive therapy in the treatment of erosive pustular dermatosis. *Journal of Clinical and Aesthetic Dermatology*, 12(10), 37-42.
- ❖ Chavez, P., & Lai, C. S. (2018). Erosive pustular dermatosis: Diagnostic challenges and management strategies. *Journal of Dermatological Treatment*, 29(3), 230-236. <https://doi.org/10.1080/09546634.2017.1372293>
- ❖ Chung, K. Y., & Lee, J. H. (2020). Topical calcineurin inhibitors in the treatment of erosive pustular dermatosis: A review of their efficacy and safety profile. *Journal of Dermatological Science*, 99(2), 91-96. <https://doi.org/10.1016/j.jdermsci.2020.05.007>