important to utilize pharmacies that are accredited, are licensed to ship out-of-state, and have a lead pharmacist serving as a constant point of contact to ensure quality products. Understanding the legality of compounding can also help dermatologists continue current cost saving and eliminate further DQSA regulations.[4]

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### An innovative reconstruction approach for scalp dermatofibrosarcoma protuberans using acellular dermal matrix (ADM): experience of a third referral center and long-term results

Dear Editor,

Dermatofibrosarcoma protuberans (DFSP) is a rare malignant tumor of soft tissues belonging to the family of cutaneous sarcomas. Surgery with wide resection margins (preferably from 3 to 5 cm) represents the gold standard. However, it is burdened by a high recurrence rate (20–50%).[1] The voluminous scalp DFSP represents a challenge for surgeons; in this regard, the ideal surgical technique must allow an effective coverage of a large defect and a close follow-up of the wound bed for a safe oncologic surveillance. The use of acellular dermal matrix (ADM) + autologous split-thickness skin graft (STSG) represents an effective answer to these reconstruction needs (Table 1). Herein, we report two cases of forehead DFSP treated with ADM with excellent results after 10 years of follow-up.

The first case involves an otherwise healthy 48-year-old man with a 5 × 2 cm subcutaneous lesion in the median frontal region and a smaller lesion in the right frontal area (Figure 1a). At first, a complete lesions excision was performed, and histopathology revealed DFSP (Figure 1b). Subsequently, a wide forehead excision (18.5 × 12 × 1.4 cm) including also the periosteum and a skull milling were performed. The forehead was covered with a double-layer acellular dermal matrix (Integra double layer; Ethicon, Inc., Somerville, NJ, USA) (Figure 1c). No complications, metastases, or signs of recurrence were observed at 10 years of follow-up, and the patient is satisfied with the aesthetic result (Figure 1d).

The second case involves a 59-year-old man with an 8 × 6.5 cm subcutaneous lesion in the occipital region (Figure 1e). A year earlier, the patient had already removed a lesion in this site, without having performed further investigations. At first, an incisional biopsy was performed and histopathology revealed a high-grade DFSP. Subsequently, a wide scalp excision (18 × 15.5 × 0.8 cm) including also the periosteum and a skull milling were performed. The occipital area was covered with a double-layer acellular dermal matrix (Integra double layer; Ethicon, Inc., Somerville, NJ, USA) (Figure 1f,g), and the negative pressure therapy (NPT) was applied for 5 days. No complications, metastases, or signs of recurrence were observed at 6 years of follow-up, and the patient is satisfied with the aesthetic result (Figure 1h).

DFSP diagnosis represents a challenge for dermatologists because at the early stage, it has no specific clinical or dermoscopic criteria, and its surgical treatment is complex. When the tumor arises on the head region, aesthetic final impact should be carefully evaluated before surgery. Deneve et al. expressed a favorable opinion on the use of ADM for temporary reconstruction or definitive reconstruction.[2] Similarly, Agostini et al. showed their reconstructive approach in five cases of DFSP (one scalp, one neck, and three supraclavicular region). In all cases, after resection the area was repaired with ADM and the NPT was applied. After 2 weeks, the dermal substitute was covered with an autologous STSG. They experienced no recurrence at 15 months (average follow-up time), no complications, and one graft partial loss (<5%).[3] This rate of disease-free survival was confirmed by Sartore et al.,[4] who presented their reconstructive approach in one case of DFSP involving the frontal region. In this case, after the resection, the loss of substance was repaired with a dermal substitute (Integra® double layer). After 3 weeks, the dermal substitute was covered with an autologous STSG. They had no recurrence at 26 months (average follow-up time) and no complications.

Our long follow-up (10 years) confirms the validity of ADM in scalp reconstruction, in terms of long-term aesthetic/functional result and oncological safety. Further studies are necessary in

**Table 1** Comparative analysis of reconstructive options

| | Second-intention healing | STSG | ADM + STSG |
|---|---|---|---|
| Healing time | Long | Quick | Quick |
| Complications and disadvantages | • Infection<br>• Healing delay<br>• Poor aesthetic outcomes<br>• Scar retraction<br>• Color diversity | • Poor aesthetic outcomes<br>• Scar retraction<br>• Patch effect<br>• Color diversity | • Infection<br>• Two-step surgery<br>• High cost<br>• Risk of infection |
| Availability | High | High | Moderate |
| Advantages | • One-step surgery<br>• No donor site | • Simple and quick<br>• Easy oncological surveillance | • Aesthetic and functional results<br>• Easy oncological surveillance<br>• Soft and pliable skin<br>• Temporary coverage while waiting for the definitive histology examination |
| Costs | Low | Moderate | High |

ADM, acellular dermal matrix; STSG, autologous split-thickness skin graft.

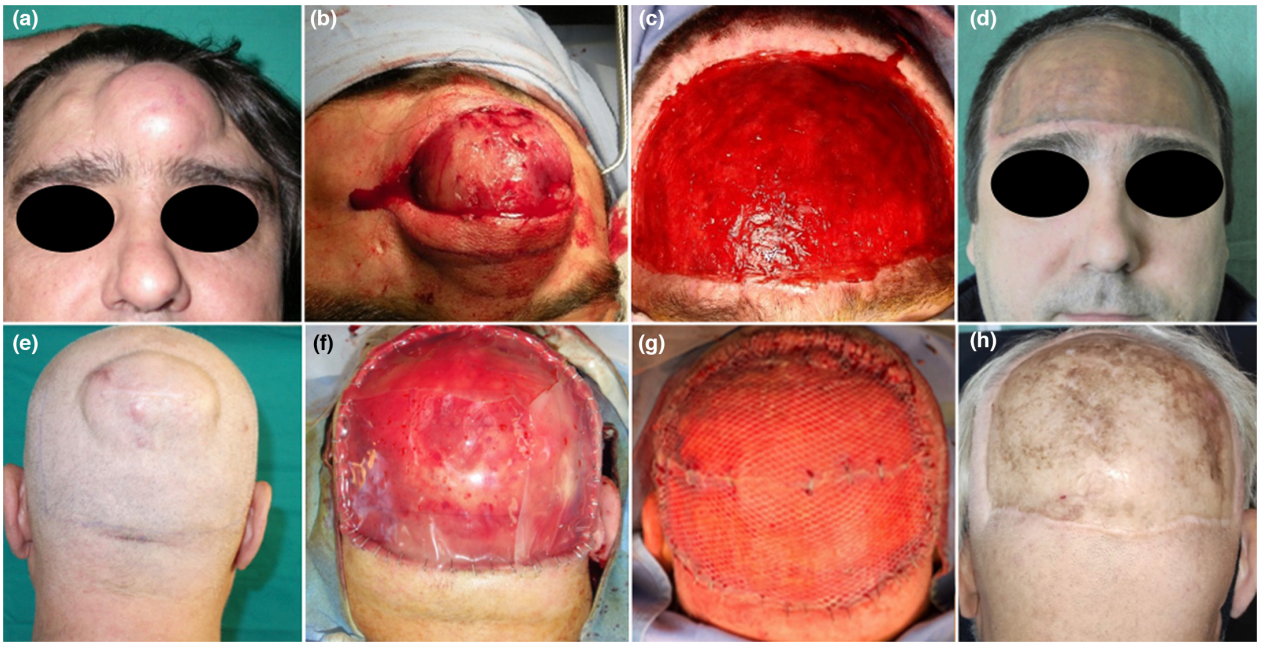


**Figure 1** Clinical appearance of DFSP of the forehead (a) and the intraoperative view during first excision (b). ADM without silicone sheet after 3 weeks of second surgery (c). Final result after 10-year follow-up with good aesthetic result. (d) Clinical appearance of DFSP of the occipital region (e) approached with the same technique mentioned above. ADM after 7 days of surgery (f); meshed STSG at the end of last surgical procedure (g); clinical control after 6-year follow-up (h).

order to confirm the data; however, this approach seems to give encouraging results, and above all it allows safe and easy follow-up together with an acceptable aesthetic result.[5]

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### A retrospective review of treatment response of palmoplantar psoriasis

Dear Editor,

Palmoplantar pustulosis (PPP) is a disabling condition presenting as erythematous plaques, papules, and sterile pustules on the palms and soles with varying degrees of hyperkeratosis, fissures, and nail involvement, often resulting in significantly reduced quality of life.[1,2] Topical treatments have shown little to no improvement in PPP especially in severe, recalcitrant cases.[1,3] Systemic therapies such as biologics are often necessary to treat PPP. While there are currently various systemic therapies available for treatment of plaque psoriasis, the effectiveness of these therapies in PPP remains largely unknown.[3]

In the following study, data from a retrospective chart review at an academic center were analyzed to determine efficacy of apremilast, anti-tumor necrosis factor (TNF), anti-interleukin-17 (IL), and anti-interleukin-23 (IL) biologics for use in PPP. Thirty-three patients were found to have utilized at least one dose of these therapies, and clearance levels were examined to determine treatment outcome. Patients treated with IL-17 inhibitors had a greater chance of improvement compared to patients treated with anti-TNF therapies (Fisher's exact test, $P = 0.07$) and a greater chance of improvement compared to patients treated with IL-23 inhibitors (Fisher's exact test, $P = 0.09$) (Table 1). Data regarding therapy sequence and combination were also analyzed, but no statistically significant differences were noted. The demographics of the study population were 20 (61%) female, 13 (39%) male, 29 (88%) White, four (12%) African American, nine (27%) smokers, 24 (73%) non-smokers, and an average age of 59 years old. The results demonstrated that six out of 12 patients (50%) improved on apremilast, seven out of 18 patients (39%) improved on anti-TNF agents, 10 out of 13 patients (77%) improved on IL-17 inhibitors, and four out of 11 patients (36%) improved on IL-23 inhibitors (Table 1).

**Table 1** Summary of therapy utility and Fisher's exact tests comparing IL-17 inhibitor therapy and other systemic therapies

| | Improved with therapy (%) | No improvement or worsened (%) | *P* value against IL-17 inhibitor therapy |
|---|---|---|---|
| IL-17 inhibitors | 10 (77) | 3 (23) | |
| Anti-TNF agents | 7 (39) | 11 (61) | 0.0669 |
| IL-23 inhibitors | 4 (36) | 7 (64) | 0.0953 |
| Apremilast | 6 (50) | 6 (50) | 0.2262 |

IL, interleukin; Anti-TNF, anti-tumor necrosis factor.

The results of this retrospective study suggest that IL-17 inhibitors may be more effective than anti-TNF and IL-23 inhibitor therapies in the treatment of PPP. Although it is unclear why anti-IL-17 may be more effective, some studies have found that IL-17 is upregulated in patients with palmoplantar psoriasis; thus, blocking IL-17 may be key toward improving PPP and should be further explored.[4,5]

The main limitation of the study was the small sample size ($n = 33$) and the predominantly White cohort. Future and larger institutional studies are necessary to confirm if IL-17 inhibitors are more effective for use in PPP in addition to exploring the possibility of utilizing new biologic therapies for treatment, including but not limited to IL-1 antagonists and JAK inhibitors.

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Ethics approval statement: The study was reviewed by the Institutional Review Board at The Ohio State University.

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