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외측흉부 기반 전거근 피판과 흉배동맥 천공지 피판을 이용한 자가면역질환 환자의 안면 연부조직 증강술

Facial Soft Tissue Augmentation in Patients with Autoimmune Disease Using Lateral Thoracic–Based Serratus Anterior Muscle and Thoracodorsal Artery Perforator Flaps

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Purpose: Autoimmune disease–related facial lipoatrophy is characterized by chronic inflammation, progressive volume loss, and unpredictable graft survival. Conventional treatments such as fat grafting or alloplastic materials often show high resorption and complication rates. This study evaluated the outcomes of lateral thoracic–based serratus anterior fascia and muscle flaps and thoracodorsal artery perforator (TDAP) flaps for facial soft tissue augmentation in this population.

Methods: A retrospective review was performed of seven patients who underwent reconstruction between 2012 and 2025 for autoimmune-related facial soft tissue depression. Traumatic, oncologic, and congenital cases were excluded. Data collected included defect location, flap type, operative time, complications, secondary procedures, and follow-up duration. Serratus anterior flaps were used for smaller defects without skin loss, while TDAP flaps were selected when longer pedicles, larger volume, or skin resurfacing were required.

Results: All patients were female, with a mean age of 53.4 years. Diagnoses included lupus-associated panniculitis (n=3) and rheumatoid arthritis–associated panniculitis (n=4). Defects involved the cheek (n=5) and chin (n=2). Serratus anterior flaps were used in four cases and TDAP flaps in three. Mean operative time was 150 minutes. No flap loss or vascular complications occurred. Over a mean follow-up of 18.9 months, stable volume retention and satisfactory symmetry were achieved.

Conclusion: Lateral thoracic–based serratus anterior and TDAP flaps provide reliable, durable augmentation with minimal donor morbidity and short operative time in autoimmune-related facial lipoatrophy.

Age	Diagnosis	Defect location	Flap	Recipient vessels	Flap size (cm)	Op time (min)	Complications	Secondary procedure
43	Lupus panniculitis	Lt. cheek	SAm	STV	12 × 6	120	None	None
47	Lupus panniculitis	Rt. cheek	SAm	STV	3 × 5	120	None	None
40	Rheumatoid panniculitis	Rt. lower chin	SAm	FV	3 × 4	120	None	None
60	Lupus panniculitis	Lt. lower chin	SAm	FV	3 × 4	120	None	Fat injection
60	Rheumatoid panniculitis Calcinosis cutis	Lt. cheek	TDAP	STV	10 × 6	150	Brow ptosis	Fat injection
59	Rheumatoid panniculitis Calcinosis cutis	Rt. cheek	TDAP	FV	11 × 8	210	None	None
65	Rheumatoid panniculitis	Lt. cheek	TDAP	FV	11 × 7	210	Brow ptosis	Debulking Midface lift

SAm, serratus anterior muscle; TDAP, thoracodorsal artery perforator (deepithelized); STV, superficial temporal vessels; FV, facial vessels

Table 1. Clinical characteristics, operative details, and postoperative outcomes of patients undergoing facial soft tissue augmentation with lateral thoracic-based SAm and TDAP free flaps for autoimmune disease–related facial lipoatrophy.

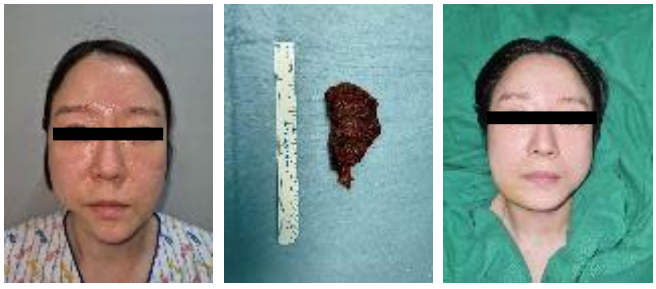

Figure 1. Clinical photographs of a 40-year-old female patient with rheumatoid panniculitis presenting with a depression deformity of the right lower chin. (Left) Preoperative view demonstrating the contour depression. (Middle) Harvested 3 × 4 cm SAm free flap for soft tissue volume augmentation, subsequently anastomosed to the facial vessels. (Right) Postoperative view showing improved contour of the right lower chin.

Figure 2. Clinical photographs of a 60-year-old female patient with rheumatoid panniculitis and calcinosis cutis presenting with a depression deformity of the left cheek. (Left) Preoperative view of left cheek depression. (Middle) Harvested TDAP free flap measuring 10 × 6 cm prior to partial deepithelialization for soft tissue augmentation and defect coverage. (Right) Defect of the left cheek following excision of calcinosis cutis.

Cont'd. (Left) Immediate postoperative lateral view demonstrating coverage of the left cheek defect. (Right) Postoperative frontal view demonstrating restoration of soft tissue volume and contour.