Temporoparietal Fascia Grafts in Rhinoplasty

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**Introduction**
A *graft* is a living tissue surgically transplanted to a recipient site without retaining connection to its original vascular supply. An *autogenous graft* is a graft of which the donor and recipient is the same individual. Autogenous grafts using fascial tissue were first described in the early 1900s for reconstruction of tendons but are now used in a multitude of procedures including rhinoplasty, usually for filling in minor defects, nasal contouring, or camouflaging underlying bone or cartilage.¹,²,³

**Temporoparietal fascia (TPF)** is a thin pliable tissue in the parietal region of the scalp that sits just below the subcutaneous fat overlaying the temporalis muscle, housing the superficial temporal vessels.⁴ It has been increasingly preferred in rhinoplasty over allogenic (synthetic) materials due to its lower cost and lower infection rates.⁵ It is also often used over autogenous grafts from other regions due to its greater mobility, vascularity, location within the same operative field, and well-concealed donor site scar.²,³

**Indications for TPF Graft Use in Rhinoplasty**

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<tr>
<th>Condition</th>
<th>Indications</th>
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<tr>
<td><strong>Saddle Nose Deformity</strong></td>
<td>• &quot;Pug nose,&quot; &quot;boxer’s nose&quot; • Usually caused by trauma, prior septal surgery, or conditions that break down septal cartilage⁶ • Challenge: functional and cosmetic issues (loss of internal septal support and mid-dorsal height)⁶ • 54 y/o F: prior sinus surgery and dorsal nasal implant; presented with loss of smell, crooked nose</td>
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<td><strong>Thin Skin</strong></td>
<td>• Genetic or resulting from prior surgery • Natural warping/fibrous contraction of cartilage grafts visible under skin¹ • 49 y/o F: 1 year s/p tertiary rhinoplasty, previously overresected; presented with impeding extrusion of cartilage graft visible under thin skin at nasal tip</td>
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<td><strong>Radix Repair</strong></td>
<td>• Low nasal starting point creates illusion of dorsal hump or nasal defect • Common mistake: rasp (file down) dorsal “hump” causing overresection⁷,⁸ • Augmentation at starting point “lengthens” dorsum and contours bridge⁷,⁸ • 36 y/o F: nasal obstruction, desire for smaller nose with less obvious dorsal hump</td>
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<td><strong>Dorsal Augmentation</strong></td>
<td>• Common after overresection of a dorsal hump¹,²,³ • Used to raise bony nasal dorsum in Asian patients⁸ • TPF alone or overlaying cartilage graft²,³,⁹ • 44 y/o F: 2 prior rhinoplasties s/p trauma; presented with collapse of internal nasal structures and small external dorsal concavity</td>
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**Discussion**
- Rhinoplasty is considered one of the most difficult aesthetic surgery procedures with a particularly high rate of revision (up to 21%)²,¹⁰,¹¹
- TPF is useful for revision rhinoplasty (corrects subtle defects, provides vascularity to scarred areas)
- Inherent properties of TPF make it ideal for surrounding allogenic material or cartilage
- Literature limited regarding TPF graft use specifically (compared to TPF flap use or temporalis graft use), consists mainly of case studies/series

**Teaching Points**
1. TPF is an extremely versatile tissue well suited for use as a free graft in rhinoplasty
2. More studies regarding TPF graft utilization in rhinoplasty, particularly larger cohorts with long-term outcome data, are needed

**Citations**

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