A Treatment Protocol for Venous or Arterial Occlusion after Filler Injection

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The first indication of vascular damage from filler injection is painless blanching. This may go unnoticed, then progress to a painful, violaceous, reticulated skin appearance in days to follow.

Presentation of Arterial Occlusion: Immediate or early, blanching, severe pain.¹

Presentation of Venous Occlusion: Delayed, dull pain, dark discoloration.¹

Interventions

1. If blanching occurs while injecting filler, **immediately stop the injection**, and attempt aspiration.

2. **Massage the treated area** while evaluating for skin color changes. If necessary, a regional nerve block may be performed to allow for vigorous massage.

3. **Apply warm compresses** for 10 minutes every one to two hours. Mottled purplish discoloration of the skin is a symptom of an underlying condition, and may be a sign of vascular compromise.
   - Blanching may be immediate upon injection of filler.
   - Blanching may be seen only while applying gentle pressure to the injection site; this would suggest that superficial collateral blood flow is visually obscuring the underlying compromised vasculature.

4. If performed by a Registered Nurse, Nurse Practitioner or Physician Assistant, the **supervising physician must be notified immediately** of any suspected signs of vascular occlusion and impending skin necrosis after filler injection.

5. If impending skin necrosis is suspected days after the procedure in the form of painful, violaceous, reticulated skin, patient is to return to the office as soon as possible for further evaluation and intervention.

6. If an HA (hyaluronic acid) filler caused this issue, inject **hyaluronidase**, at least 10 to 30 units or 0.1ml of hyaluronidase per each 0.1ml of filler to be dissolved.² I suggest injecting liberally up to 1ml of hyaluronidase
(concentration 150U/ml). Hyaluronidase may be mixed with a local anesthetic agent (e.g., Lidocaine).*

7. **Nitroglycerin paste 2%** should be applied immediately upon suspected necrosis and then for 5 minutes every 1-2 hours in the acute stage. Watch for signs of dizziness and hypotension.

8. **Aspirin 325mg** under the tongue immediately then 81mg daily thereafter.

9. **Photograph, Photograph, Photograph and Document!**

10. **Oral Prednisone 20 to 40mg daily for three to five days.**³

11. **Consider Hyperbaric Oxygen** treatment as soon as possible, then daily until area has improved.

12. If necrosis occurs, diligent wound care is critical.⁴ Consider silicone gel sheeting. Consider autologous platelet-rich plasma (PRP).

13. Reassure patient that we are using best standard of care practice protocol considering all modalities at our disposal (based on current peer-reviewed, evidenced-based research) to assure the best possible outcome for them.

* When hyaluronidase is added to a local anesthetic agent, it hastens the onset of analgesia and tends to reduce the swelling caused by local infiltration, but the wider spread of the local anesthetic solution increases its absorption; this shortens its duration of action and tends to increase the incidences of systemic reaction. Source: Vitrase® (hyaluronidase for injection) FDA Package Insert.

### Post-Intervention Instructions to give Patient

This protocol includes guidelines that may vary for each patient. The end-point result would be the full resolution of symptoms and management of any subsequent sequelae.

1. **Massage the treated area** regularly for several days to improve circulation and tissue viability.

2. **Nitroglycerin paste 2%** may be continued at home three times a day provided you (patient) do not experience dizziness.

3. **Aspirin 81mg by mouth daily.**

4. Continue **Oral Prednisone 20 to 40mg by mouth daily**, for three to five days.

5. **Sildenafil (Viagra) 50mg by mouth per day.**

6. Daily Hyperbaric Oxygen may be considered.
Other considerations

1. Watch for signs of infection, since compromised skin increases the likelihood of this. Consider antibiotics (topical, parenteral, or both) in cases of skin breakdown.
2. Conservative debridement.
3. Follow-up with the injector and/or doctor frequently (i.e., daily) until the affected area of concern improves.
4. Refer to wound care specialist.

References