Hyaluronic Acid Filler Emergency Protocol

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Background

Filler has gained growing popularity over the past several years. Currently, fillers are used in a variety of situations including but not limited to facial contouring, wrinkle correction, and improvement of congenital defects. With increased use has come increased complications. Prevention of these complications is important which can be accomplished through a detailed understanding of vascular anatomy. However, equally important is the prompt management of these complications when they arise by physicians and nursing staff.

Early complications are well understood and are similar through all types of fillers. These result from technical errors and infections and can result in prolonged pain and swelling. However, late complications due to things such as product migration, have no consensus on management. With this study, we hope to review clinical signs for complications to aid in early recognition and to provide an emergency protocol with a pretest kit for when this occurs.

Objectives

1. Establish an emergency protocol and kit for hyaluronic acid (HA) filler complications in the outpatient setting.
2. To provide guidance and reduce stress for providers, nurses, and patients on how to be prepared and handle these complications in the acute setting.
3. Prevent serious or permanent negative outcomes of hyaluronic acid filler including, but not limited to blindness, skin necrosis, anaphylaxis, or even death.

Figure 1. Occlusion of dorsal nasal and subcutaneous vessels

References

1. Filler Emergency Kit

Protocol

Complication Steps:

Skin Necrosis

See Figure 1

1. Early recognition is crucial; persistent blanching can provide early diagnosis before the appearance of more obvious tissue retraction/day 2-3
2. Start seeing blisters/blanching/temperature changes/scarring

STOP INJECTING

3. Stop injection at once
4. Administer 200 units of hyaluronidase with cannula into every localized affected area/evessel that is visualized (100 units if in the nose) – best results within 4-6 hours of administration of HA but after no more than 72 hours
5. Make sure to ask patient if they feel pain to assess systemic response
6. Call 911 if swelling or local involvement of other tissues come
7. Administer sublingual aspirin 325 mg (мест бълда) should take aspirin 91 mg per day
8. Re-evaluate patient every 30-40 minutes; subsequent injections should only be in the areas in which ischemia remains visible, likely following the path of the vessel (typically most will resolve after 2-3 days; regions should be seen at the earlier vaccination
9. Give antibiotics to prevent infection: Clindamycin 600 mg IV twice for 7 days or Clarithromycin 500 mg IV twice for 7 days
10. One-Time-Dose 25 mg or Desamethasone 8 mg IM can be given as well to reduce inflammation if needed
11. If above steps do not allow immediate signs of blood flow, call for emergent hyperbaric oxygen therapy: marvel in Carlton Clinic Windom Center, Rehoboth, MA (544) 525-232

Blindness

1. Can recognize with complete or unilateral vision loss, cataract/ptosis, vascular/scleritis, pain, skin changes or CNS findings

2. Listen for voice
3. Neurontin should be shelled at 33 cm, 1 mg at a time
4. Swinging flashlight test is shown for normal pupillary function
5. Exacellular movements and pupils should be evaluated
6. Ask, pain, visual changes, weakness in extremities or other symptoms such as nausea, headache and dizziness
7. Strength exam of extremities should be performed
8. Skin biopsies including, vasomotor, dizziness or changes should be documented and careful notes left in the affected area

NO CURRENT EVIDENCE BASED, ACCEPTED STANDARD OF CARE:

Understand the path of the vessel (typically most will resolve after 3-4 days with 2-3 injections per day; regions should be seen at the earlier vaccination

Anaphylaxis

1. Administer epinephrine 1,000, 10 ml, 10 mg/kg, should be given as IM injection in outer thigh
2. Give bolus of 0.9% NaCl (9mg/kg, max of 200mg)
3. Give promethazine (25 mg/mL, 2mg) by IV
4. If vomiting present, give metoclopramide 10 mg IV over a 30 minute period
5. Monitor with cardiac monitor and pulse oximeter for vital signs
6. Immediately transfer to Emergency Department after above steps completed

Nodules

1. Through TTRP: Infection vs classic dermal HA nodules
2. Inflammatory vs noninflammatory
3. Patient’s sense of urgency
4. Painful swelling is appropriate in absence of infection
5. Evaluate and evaluate use of case by case basis
6. Oral antibiotics (refer to chart below)
7. Oral steroids (risk of worsening infectious process)
8. Hydrocortisone (every 6-8 hours inside of center node)
9. Message
10. Systemic use of antibiotics and NSAIDs
11. Can consider L.S. PSU +/- steroids for recurrence cases
12. Last resort in surgical excision

Overfilling

1. Can present days, weeks, or months after treatment (common around eyes, lips, and mandibles); can see blue grey discoloration due to dermal effect
2. Administer Hyaluronic acid into the affected area and massage
3. 10-20% 1st Hyaluronic acid
4. 10-20% 2nd Hyaluronic acid
5. 5 mg/kg (rule out sulfa allergy)
6. Give bolus of IV hydrocortisone (5mg/kg, max of 200mg)
7. Administer sublingual aspirin 325 mg
8. Get patient to start breathing into a paper bag and perform ocular massage
9. Should contact ophthalmologist ASAP if vision does not return within 15 min
10. Can recognize with complete or unilateral vision loss, ocular pain/headache, nausea/vomiting, ophthalmoplegia, ptosis, skin changes or CNS findings

8. After above measures, expedite to Emergency Department, the retina can tolerate approximately 90 minutes of ischemia until damage becomes permanent

Hyaluronidase bottle 1500 units (minimum 2 bottles)

0.9% NaCl 250 mL for dilution
Aspirin tablets 325 mg
Ciprofloxacin tablets 500 mg
Clarithromycin tablets 500 mg
Demethasone 8 mg IM
Prednisolone 25 mg tablets
Hydrocortisone 100 mg IV
Timolol drops 0.25%
Syringes 1 mL, 3 mL, 5 mL (2 each)
Needles 33Gx8 mm, 23Gx25 mm, 16Gx38 mm (2 each)
Povidone-iodine prep pads
Promethazine (25 mg/mL, 2 mL by IV)

Lidocaine 2% 50 mL
Sterile swab
Cannula 25G x 50 mm
Cannula 25G x 38 mm
Angiocath 22G x 25 mm
Timer
Salbutamol 100 μg/dose
Epinphrine 1:1000
Pulse oximeter
Acrizolamide 500 mg/vial
Mannitol 20% 1L
Connector

Dermatology Offices in the Area with Available Hyaluronic acid in an Emergency:

River Ridge Dermatology
Dr. Phillip E. Grubbs (Plastic Surgery)
(540) 951-3376
7304 South Main St
Blacksburg, VA 24060

Blackburg, VA 24060
Dr. Michael Boomken (Plastic Surgery/ENT)
(540) 443-7400
830 Davis St Ste 1
Blackburg, VA 24060

References


Conclusion

Although filler complications are rare, it is important to be equipped for when they do occur. Even with knowledge of anatomic structures and the right technique, the risk of filler complications still exists. With this study, we hope to implement this protocol and filler emergency kit in our own practice to produce more favorable outcomes, reduce stress, and help providers and nursing staff feel more prepared to handle these events.

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