

## Hyaluronic Acids: Delayed Side Effects

### Reminder

AHAs are implantable medical devices (IMD); currently, the residual level of BDDE is <2PPT. Their nature varies considerably (size, concentration, hydrophilicity, immunogenicity, etc.). Studies have been conducted on rats only and have not been longer than approximately 1 year. However, reactions sometimes occur 2 to 3 years after injection.

### Occurrence mechanisms

1. Due to a technical error:

- poor placement, poor choice of implant, or of injection level (too superficial, for example): blisters, cords (sometimes > 2 years), migration
- Tyndall effect (bluish appearance) by injecting too much or injecting too superficially
- malar trauma edema (chronic malar pockets)
- quantities: too much, overcorrection (isolated non-inflammatory nodule), or too fast (inflammation)
- lack of asepsis: removal of make-up, antisepsis, sterility of needles and cannulas (slow imperceptible infection)
- simultaneous application with another technique (heating of tissues ....)
- positioning onto a permanent implant or prosthesis

2/ Due to failure to comply with counter-indications

- active autoimmune diseases (HSR)
- recent or ongoing inflammation or infection (fluctuating inflammatory nodule)
- hypersensitivity to HA or lidocaine
- antécédents d'allergie de type anaphylactique

2/ history of anaphylactic allergy

2 / Unpredictable or unexpected, a few weeks or months after injection

- Dyschromia, by release of iron from hemoglobin after bleeding, or by microtrauma on pigmented skin
- Isolated non-inflammatory nodule due to encapsulated hematoma
- Delayed Hypersensitivity (HSR): Single or Multiple Inflammatory Nodule

### Description:

1 / Fluctuating isolated inflammatory nodule of infectious origin (abscess?) It is sensitive or painful, sometimes with erythema and increased local heat: dangerous if located near the angular artery

2/ Isolated (sometimes multiple) non-inflammatory, non-fluctuating nodule: biofilm or systemic disease

3/ Nodule inflammatory non-fluctuating: biofilm, granuloma, HSR.

### What to do?

We will discuss different cases and consider the following possibilities for each case:

1/ Surveillance

2/ Search for systemic disease

3/ Biopsy and bacteriological analysis

4/ Incision and drainage, i.e. excision

5/ Antibiotherapy

6/ Hyaluronidase

7/ Intra-lesional steroids

8/ LED

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